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Public perceptions of local food environments in shrinking cities: Weighing solutions to community food insecurity in Camden, New Jersey

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ABSTRACT

Historically, the shrinking city of Camden, New Jersey has experienced a wide range of issues related to social, environmental, and nutritional injustice. This study focuses on two of the city's most at-risk neighborhoods, Waterfront South and Bergen Square, and examines residents' perceptions of their local food environments, food insecurity, and proposed solutions, including a potential online grocery delivery service. Many participants across our four methods indicated significant levels of food insecurity, often citing their neighborhoods' dependence on unhealthy corner stores, lack of full-service grocery retailers, and lack of connection to local food initiatives in other neighborhoods. Responses from our focus group participants generated three dominant themes for potential solutions: (i) attracting new and improving existing grocery retailers in the study area; (ii) increasing education about and participation in local food production; and (iii) fostering collaboration among the city's diverse stakeholders to develop unified food security initiatives. Focus group participants and stakeholder interviewees expressed mixed opinions about a new online grocery delivery service, with some emphasizing its potential convenience and a majority expressing concerns about product quality and equitable access to the service.

1. Introduction

Shrinking cities—urban areas that experienced rapid decline because of industrial abandonment, population migration, and chronic disinvestment (e.g., Detroit, Michigan; Baltimore, Maryland)—present a series of unique problems for planning professionals and residents alike. These problems include inadequate or insufficient housing, lack of employment opportunities, environmental degradation, poor physical and mental health, and inequities in food access and security (Hollander et al., 2009; Schilling & Mallach, 2012). Effective planning for shrinking cities must resist traditional growth-minded approaches in favor of addressing historic social, environmental, and food-related injustices; managing the shrink; collaborating across sectors; and prioritizing community engagement (Schilling & Mallach, 2012; Mallach, 2017). When combined, these action steps can empower planners to develop right-sized proposals responsive to each shrinking city's network of needs (Németh et al., 2020; Schilling & Logan, 2008).

There is a wealth of literature connecting issues of food access/security with shrinking cities in the United States, including Philadelphia,

Pennsylvania (Gripper et al., 2022; Karpyn et al., 2010; Meenar & Hoover, 2012); Baltimore, Maryland (Li & Yuan, 2022; Moore & Diez Roux, 2006); Camden, New Jersey (Cairns, 2018; Chrisinger et al., 2018); Detroit, Michigan (Li & Yuan, 2022; Zenk et al., 2005); and Pittsburgh, Pennsylvania (Dubowitz et al., 2015; Li & Yuan, 2022). Many of these articles, however, either do not use the term "shrinking city" or use a synonym for it (e.g., "postindustrial"). Semantics aside, even fewer studies focus on the role of public perceptions of the local food environment within the context of shrinking cities (Chrisinger et al., 2018). Relatedly, broader studies about planning for/in shrinking cities tend to omit sustained discussions about food access and security, as Khavarian-Garmsir (2023) highlights, and the few studies that mention it only briefly present examples of local "green economy" initiatives (Schilling & Mallach, 2012) or cite urban agriculture as a potential solution (Hollander et al., 2009)—echoing common community responses to food insecurity in other food access literature (Gripper et al., 2022; Meenar, 2015).

The aim of our study, then, is to bring together these disparate discussions of shrinking cities, their food environments, solutions, and

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residents' perceptions of them by using two neighborhoods in Camden, New Jersey, as case studies: Waterfront South and Bergen Square. Our study specifically focuses on the viability of online grocery delivery services to address the grocery gap in shrinking cities like Camden, again using residents' perceptions as the basis for evaluation to determine potential adoption of such a model. We begin with a review of the relevant literature, followed by a brief overview of our study area and our mixed-methods approach. We then present and discuss our results from those methods according to emergent themes before offering policy and planning implications for the future.

2. Literature review

2.1. Food environments and their role in food access and security

Food environments encompass the physical, socio-economic, cultural, and political environments of a community or a region that impact food access and security. Geography thus becomes the key characteristic upon which scholars and planners define a food environment, resulting in overlapping discussions about urban (Martin et al., 2014), local (Caspi et al., 2012; Kelly et al., 2011), community (Holsten, 2009), and/or neighborhood food environments (Meenar, 2017; Raja et al., 2008). Despite their different names, what constitutes each of these "environments" is generally the same: availability and variety of products/retailers; accessibility of those products/retailers; affordability; and the cultural appropriateness or acceptability of the products offered (Caspi et al., 2012). Food environment scans across these related "environments" often report a proliferation of corner/convenience stores in minority communities that offer far fewer fresh/healthy food options compared to retailers in wealthier white communities (Martin et al., 2014; Raja et al., 2008; Shaker et al., 2023). Such disparities in food retail options often cause low-income or urban residents to bypass their own community food environments in favor of those of more affluent surrounding suburbs (Martin et al., 2014), thereby increasing the amount of time and money spent grocery shopping.

2.2. Supermarket redlining as a historic barrier to food access

In the quest for food access, the large-scale supermarket stands as the primary symbol of the historic failures of the corporate food system to meet the needs of low-income and minority residents. Conventional wisdom posits the supermarket as a presumably "easy" solution to food access because of its promise of well-stocked shelves, rows of fresh produce, reasonable prices, and centralized location, yet its presence can often have adverse effects that range from false perceptions of increased access (Moore & Diez Roux, 2006) to displacement and gentrification (Shaker et al., 2023). Supermarket-based gentrification, though, operates on two problematic assumptions: (1) that the company responsible for the store will agree to site a new location in the area at all, and (2) that the location will operate in the area long-term. The first assumption relies on the concept of "supermarket redlining," which recalls the structural inequality of residential redlining (Li & Yuan, 2022; Raja et al., 2008; Shaker et al., 2023). This practice tacitly empowers food retailers to assess low-income neighborhoods as unprofitable and therefore unsuitable for new locations. The second assumption ignores the market conditions surrounding a proposed supermarket's operation once that supermarket realizes there are better profit margins in nearby affluent white suburbs (Li & Yuan, 2022). A supermarket's choice to leave risks transforming already at-risk communities into heavily stigmatized "food deserts" at greater disadvantage than if the supermarket was never sited at all (Raja et al., 2008).

2.3. Online grocery delivery services as potential solutions to food access

Online grocery delivery services are an increasingly common solution cited in planning scholarship as a step toward empowering at-risk communities to achieve food justice/sovereignty (Braga et al., 2023; Horst et al., 2017; Noll & Murdock, 2020). Studies have been conducted in multiple states, including Maryland, Michigan, New Mexico, and North Carolina; however, no study to our knowledge has focused on New Jersey. The adoption and use of such services have exponentially increased during the COVID-19 pandemic (Braga et al., 2023; Fernandez & Raine, 2021; Grummon et al., 2023), especially among older adults (Kvalsvik, 2022), low-income users (Rogus et al., 2020; Trude et al., 2022), and those in transit-poor areas (Dillahunt et al., 2019), although some research shows online grocery shopping remains more popular among higher-income users (Grummon et al., 2023). One of the features scholars most often cite as positively influencing shoppers' willingness to consider, use, or reuse online grocery delivery services is convenience (Dillahunt et al., 2019; Fernandez & Raine, 2021; Klepek & Bauerová, 2020). Even if online grocery users are multichannel shoppers (Klepek & Bauerová, 2020), they value the convenience of online services in combination with the self-service options at in-person retailers. Yet, there does not seem to be a compelling consensus about how much time, effort, or money such services save end-users (Braga et al., 2023; Kvalsvik, 2022; Rogus et al., 2020), thus calling into question whether convenience is a legitimate, perceived, or false benefit.

There is, however, a much clearer consensus about the actual and perceived barriers to users' adoption of online grocery delivery services. One such barrier is haptic information, which describes users' inherent desire to see, touch, and smell products prior to purchasing them (Fernandez & Raine, 2021; Kühn et al., 2020; Kvalsvik, 2022). This haptic information is especially important when it comes to users' decisions to purchase perishable goods digitally or in-person (Kühn et al., 2020). The physical experience of in-person shopping serves as the catalyst for two of the most common perceived barriers among potential users, namely a concern for the quality of perishable goods and trust. The first perceived barrier is straightforward: users hope their items would arrive in the same condition as if they had personally selected them (Fernandez & Raine, 2021; Kvalsvik, 2022; Rogus et al., 2020). The second perceived barrier, though, is much thornier, with a handful of surveyed potential users indicating they simply did not or would not trust hired shoppers' choices when picking fresh produce. This mistrust further implies that produce selection based on ripeness or freshness is incredibly and intimately subjective, despite many grocers offering seemingly objective evaluation guidelines (Fernandez & Raine, 2021; Rogus et al., 2020; Trude et al., 2022).

Based on our review of the literature, it is apparent that, when considered separately, shrinking cities and local food environments are composed of several unique elements, each of which has its own justice-related issues that require careful consideration and complex solutions. When taken together, those issues become even more entangled, although overlaps emerge that may allow solutions to work in multiple contexts. Schilling and Logan's (2008) call for right-sizing seems ideal to explore how to utilize shrinking city planning practices to address issues of food access and insecurity, guided by valuable local knowledge gleaned from public perceptions of local food environments. To this end, we implemented a series of research methods that directly engaged residents and community stakeholders alike to address the following questions:

(1) How do shrinking city residents and community stakeholders perceive the current food environment and food insecurity?
(2) Do residents and stakeholders believe their current food environments accommodate or are responsive to changes in their eating patterns/preferences?
(3) What solutions to community food insecurity/access are shrinking city residents and stakeholders most receptive to, and why?
(4) What are their perceptions of an online grocery delivery model as a potential solution/alternative?

3. Methodology

3.1. Geographic context

The city of Camden, New Jersey played a crucial role in the development and advancement of the nation between the Civil War and World War II. However, it lost much of its industrial base in the mid-twentieth century, thereby spurring economic and population decline as corporations and job seekers fled to surrounding suburbs or metropolises. This flight has left behind numerous environmental hazards like contaminated sites and defunct infrastructure, but more importantly it has transformed Camden into a perpetually shrinking city. Although neighborhoods like Cooper Grant and Lanning Square have benefitted from recent investments, other neighborhoods continue to suffer from the chronic disinvestment and environmental injustice that began in the second half of the twentieth century. These blights closely align with most definitions of an environmental justice community, many of which share the following emphases: (1) the percentage of low-income individuals, non-native English speakers, and/or persons of color within the community; and (2) the adverse environmental and health effects these populations disproportionately experience because of their exposure to heavily polluting industries. The state of New Jersey uses similar parameters but instead refers to these communities as "overburdened," of which Camden is one because of its many environmental problems that affect residents' personal and socio-economic well-being and cause widespread food insecurity and grocery retail leakage (see Fig. 1).

The present study focuses on two of Camden's most disadvantaged neighborhoods still awaiting proper reinvestment and remediation: Waterfront South and Bergen Square. Both neighborhoods are primarily residential, share at least one border with either the Delaware River or Interstate 676, contain over 20 contaminated sites and one superfund site, and are home to numerous industrial operations that are sources of

persistent air, ground, and noise pollution (Meenar et al., 2022). Because both neighborhoods are consistently sited for hazardous industrial use, they also tend to be considered unsuitable for full-scale grocery retailers in favor of more affluent suburbs in Camden County or more populated neighborhoods in Philadelphia.

3.2. Data collection

We collected data using four research methods from January–April 2022, all of which fall under the purview of the approval the team received from Rowan University's Institutional Review Board (IRB), protocol PRO-2022-26. These methods include a food environment scan, an online survey for neighborhood residents, two focus groups (one in each study neighborhood), and a series of individual virtual interviews with key community stakeholders. We also partnered with several non-profits (secular and faith-based) to assist with data collection.

3.2.1. Food environment scan

Using NJ MAP (an online interactive atlas) and Google Maps, our team identified fourteen retailers currently operating within the study area and established a list of relevant features to observe at each location: surrounding infrastructure; general appearance; acceptance of food assistance programs (i.e., SNAP and/or WIC); the price of food staples (i. e., bread, milk, and eggs); and the availability of fresh/healthy foods. We divided our team into three smaller groups and evenly distributed the retailers among them, at which point each team conducted fieldwork to compile notes and photographs of their assigned locations.

3.2.2. Community survey

We then worked with our community partners to develop twenty questions to help us understand residents' perceptions of food insecurity and inequity within their communities. We organized these questions into four broad categories: (1) demographics and shopping considerations, (2) grocery shopping experiences, (3) social/cultural issues related to grocery shopping, and (4) online grocery delivery. Following a snowball sampling method, we relied on several community partners to distribute the online version of the survey (and a limited number of paper copies) at three local community events, where anyone age 18 or older living in our two study neighborhoods was invited to participate. Approximately 350 residents were invited, with a total of 91 submitting responses (roughly a 26% response rate), 16 of which were paper surveys. Approximately 80% of survey participants responded to our optional demographic question about their age range, where 45–54 was the most common (39%), followed by 35–44 (28%), 55–64 (13%), 25–34 (11%), 65+ (8%), and 18–24 (1%).

3.2.3. Focus groups

Our team again collaborated with our community partners to organize two focus groups, (one in each neighborhood), which attracted a total of fifteen participants with a diverse range of backgrounds, including community-based organizations or youth-focused nonprofits, faith-based institutions, education initiatives or academic institutions, and the general public. Of those fifteen participants, twelve identified as female and three as male; eleven were Black or African American, three were White, and one was Hispanic; only one participant was under the age of 30; and approximate incomes ranged from $25k–$60k. Each focus group lasted approximately 75 min and was organized into two parts: three smaller breakout discussions, consisting of discussions about personal food history, geographic context for grocery shopping, and online grocery delivery services, and a final large group discussion to generate recommendations for addressing food insecurity in our study neighborhoods and across the city. All discussions were recorded and transcribed for subsequent analysis.

3.2.4. Stakeholder interviews

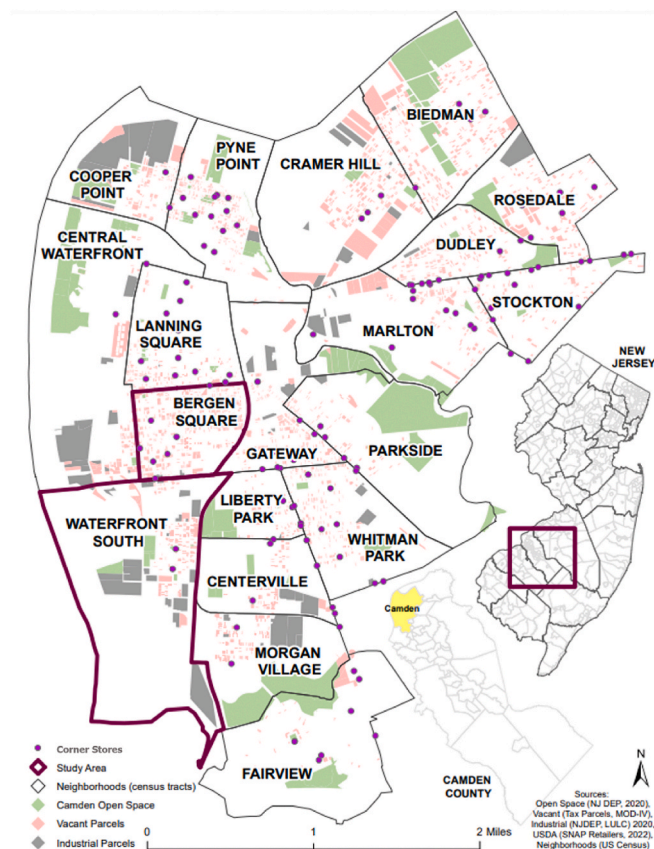Finally, our community partners were instrumental in developing a

Fig. 1. Food access points across Camden (study neighborhoods highlighted).

list of potential interviewees that represented community voices both new and experienced. Out of the 16 participants we contacted, eight agreed to participate. Our interviewees represented four different non-profits, three of which were based in Camden, two academic institutions, one regional planning commission, and Camden's city council. All interviews lasted between 30 and 60 min, depending on the interviewees' schedules, and were recorded and transcribed through Zoom. Our team developed a series of eight questions to guide the interviews, although the narratives many of our interviewees offered answered those questions in more fluid and dynamic ways.

3.3. Data analysis

Our analysis of our food environment scan data was mostly quantitative to identify key similarities, differences, or gaps in local food availability. Our team began by compiling the raw data into Microsoft Excel before reorganizing and analyzing it according to emergent themes. For the community survey data, we assigned each team member between 2 and 4 questions for individual analysis and visualization in Excel, after which the team performed a collaborative hybrid analysis of descriptive statistics and qualitative content analysis to identify the most prominent or unexpected trends for inclusion in the final report. We then conducted qualitative content analysis of our focus group data, wherein the team member responsible for leading each individual discussion station collected, organized, analyzed, and visualized the physical data (e.g., post-it notes, maps, and handwritten notes/responses) to identify key themes and present results to the whole team. Finally, we assigned each team member either one or two stakeholder interviews to conduct, transcribe, and analyze using a combination of Microsoft Word, Zoom, and word-cloud generators.

4. Results

4.1. "It's still just [corner stores] and Chinese food"

Across our four methods, our data painted a similar picture of Camden's struggle with food insecurity. For example, approximately 90% of focus group participants agreed food insecurity was a legitimate concern in their communities because of a network of factors, chief among them the lack of mid- or full-scale grocery retailers within the city limits. Many factors related to the numerous corner stores throughout each neighborhood: poor selection of fresh or healthy products, higher prices for food staples (Fig. 2), limited hours of operation, or other infrastructure- or safety-related concerns (e.g., crumbling sidewalks, uninviting exteriors, and loitering). Additional factors included unreliable or unavailable transportation and the wide availability of take-out restaurants.
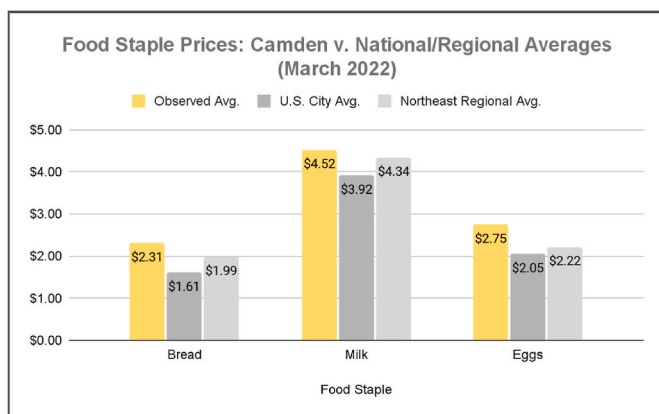

Fig. 2. A comparison of food staple prices in Camden versus March 2022 national/regional averages.

This network of reasons echoes our findings from the 85% of survey respondents who worry to some extent about having access to fresh and affordable food, where 54% of those respondents worry often or all the time. With so few options within their own neighborhoods, many residents either choose to or must travel an average of 10 miles outside the city to conduct their grocery shopping in neighboring municipalities because of their better selections, prices, and variety of chain, corporate, or even regional retailers close to each other.

4.2. "Fresh ingredients aren't really fresh"

Survey participants' dietary habits/preferences were ordinary, in that the ingredients they prefer to buy, prepare, and eat are easily accessible in most mid- or full-scale grocery retailers. These ingredients included grains and starches, proteins and produce, and ethnic foods, dairy, and sweets. Specifically, residents indicated strong preferences for chicken (26.4%), pasta (20.9%), and vegetables (19.8%), with less than 6% indicating a strong preference for culturally specific foods (e.g., Hispanic or Soul). Most residents did not report experiencing any dietary restrictions that dictated their grocery shopping, but those that did reported dairy- or gluten-free diets, vegetarianism, or an aversion to pork. While 88% of survey participants reported they prepared meals at home at least three times a week, there were two key limitations to at-home meal preparation, namely a lack of time and energy because of work schedules, and the inconvenience of having to travel to grocery stores outside the city to obtain the necessary ingredients. If such a trip is necessary, over half of survey respondents said they prefer to shop at larger chain retailers, while 38% prefer to patronize local businesses. As a result, 75% of respondents reported they consider buying fast, prepared, or frozen foods over fresh ingredients, although a majority (46%) only consider doing so occasionally. While time may be the most logical explanation for these occasional considerations, some survey respondents also mentioned how the fresh ingredients available at retailers in their neighborhoods are not that fresh because they seem to spoil or "turn" within only a day or two.

4.3. "[Food insecurity is] such a large, hairy, systemic problem [that solutions have] to be bigger than any one specific program"

Residents and stakeholders alike offered a diverse range of viable solutions that fell into one of three categories: (1) attracting additional grocery retailers/options; (2) educating residents on local food production and preparation; (3) fostering collaboration and political advocacy across the city (see Table 1).

Table 1
Selected quotes from interviews regarding solutions to food insecurity in Camden.

(1) "There's the Double Up Food Bucks idea where you can double your SNAP benefits if you're shopping at farmer's markets, which [has] the added benefit of supporting local farmers, in addition to providing better food access."

(2) "The city should work with partners to determine properties that would be suitable for a full-service grocery store. And that has a lot to do with the lot size or the building size … or if there's a vacant building that's currently there that needs to be torn down to do some site preparation."

(3) "So, if there's just one large grocery store, it's the same thing: how are people from other neighborhoods getting there? If you're in South Camden and this opens in East Camden, that's a hike and [if someone is] not familiar with the public transportation in Camden to know if there are buses that go there, then at that point, you might as well take the bus to Cherry Hill, which is a 2 h bus ride … [so we need to bolster] the infrastructure that already exists and figure[e] out how to make that more effective."

(4) "I would love to see someone invest in more mobile food markets, so you can have one truck in every place, so you invest more in that, and you bring it to that community of people."

(5) "[An online grocery delivery service has] so much potential and obviously a physical grocery store has just fizzled out so many times that this may be the answer, or the program people have been waiting for."

4.3.1. Attracting new grocery retailers and improving existing ones

The team received a mixture of responses regarding what types of new grocery retailers community members would like to see, with about half of focus group participants requesting a series of local specialty shops, mobile markets, or more traditional farmers' markets that would enhance walkability and potentially revitalize downtown corridors. The other half supported attracting a name-brand, full-service supermarket that would offer a larger variety of fresh and healthy products in one location. Although a full-service supermarket seems like an easy solution, some stakeholders were skeptical of this model for one of three reasons: (1) historic supermarket redlining, (2) potential inaccessibility for residents without personal vehicles, and (3) the belief that funding/ efforts should focus on the retailers already operating within the community.

4.3.2. Educating residents on local food production and preparation

Simply offering fresher, healthier ingredients at more affordable prices, though, does not necessarily mean all residents will choose to buy them. Such changes in purchasing habits require respectful, continued education. Stakeholders reported recent efforts among neighborhoods across Camden focused on educating residents on how to start and maintain their own private gardens in the hopes that growing experience may inspire them to participate in existing community gardens, start new ones, or simply eat healthier/fresher foods. Most survey respondents indicated an interest in learning about these local food production programs, although they highlighted time, space, and prior knowledge as potential barriers. Even still, stakeholders are invigorated by these new education programs and hope they can inspire a thriving urban agricultural economy in Camden.

4.3.3. Fostering collaboration and political advocacy across the city

The success of those education efforts, as well as efforts in other arenas of the local food system, necessarily requires collaboration among residents and local community organizations to secure funding and to implement food security initiatives. Encouraging collaboration would help minimize competition among Camden's many secular and faith-based organizations, which all place Camden residents' health and well-being at the heart of what they do. By combining resources, these organizations could help influence the revision of local planning documents with food equity in mind; conduct a city-wide audit of previous efforts to generate more effective planning recommendations; attract local investors and/or vendors to expand the Virtua Mobile Farmer's Market into more neighborhoods; and mobilize efforts to advocate for an expansion of food assistance programs, subsidies, or tax incentives.

4.4. "Th[e] possibility of this food delivery program … puts a new energy into the air …"

One of the three breakout sessions during the focus groups was dedicated to understanding community members' perceptions of existing and potential online grocery delivery services. Participants shared their prior experiences with such services and gauged their own willingness to utilize a new one, which led to dynamic conversations about the major perceived benefits and challenges of that new service.

4.4.1. Residents' prior experiences with online grocery delivery services

Most of our focus group participants reported they had never tried ordering groceries online for one of three reasons: (1) their need for haptic information when selecting products (e.g., touch, sight, and smell); (2) their lack of trust in the workers responsible for picking their groceries to fulfill their orders; and (3) their desires for smaller portions for single individual households. The small number of participants who reported having used an online grocery delivery service before, however, appreciated those services' convenience and variety of product offerings.

4.4.2. Residents' willingness to utilize a new online grocery delivery service

Slightly less than half of survey participants indicated they would be comfortable with purchasing groceries online, while approximately 30% said they would not. For those individuals who were comfortable with purchasing groceries online or were neutral about doing so, the most common food groups they would be willing to order were shelf-stable items like snacks and grains/carbs. If they were to make the switch to online grocery delivery, most participants emphasized the need for the service to be as local as possible in terms of production, distribution, and employment. They also expressed the need for thorough product information as a substitute for being able to examine products in-person, including nutrition facts, expiration dates, quantity in-stock, and growing practices. Pricing and sales were two additional factors in deciding whether to utilize the service, including the ability to compare prices, take advantage of weekly sales, utilize coupons, and pay with food assistance programs.

4.4.3. Perceived benefits of a new online grocery delivery service

While convenience and ease-of-use were two of the more obvious perceived benefits of such a service, stakeholders identified broader, justice-oriented benefits of the service, referring to it as an "economic engine" that would increase residents' food access and purchasing power. Increased access thus became a common theme among stakeholders, with others supporting the hypothetical service for its elimination of geographic or transportation barriers that normally prevent residents from gaining access to fresh and healthy foods simply because they live in a certain neighborhood.

4.4.4. Perceived challenges of a new online grocery delivery service

Despite these perceived benefits, focus group participants often expressed concerns about the logistics of the service, namely the timing of deliveries, payment options, delivery fees, and the overall user experience, especially for elderly residents unfamiliar with technology. Their concerns about the timing of deliveries stemmed from two areas. First is what many of them referred to as "porch pirates," a vernacular name given to petty criminals who canvas neighborhoods looking for packages left unattended on porches and stoops. Second is the freshness and quality of products, especially related to the packaging of deliveries if residents were unable to receive and store them as soon as they arrived. Given residents' consistent preferences for selecting perishable items themselves, they expressed intense concerns about what recourse, if any, they would have if they received incorrect or unsatisfactory items.

There are two additional challenges worth highlighting individually. First is residents' preference for in-person shopping as a means of socialization and community interaction. Many residents explained how grocery shopping is not a chore but rather something they look forward to because it provides an opportunity to leave the house and catch up with friends, colleagues, and parishioners. Second is residents' fear of lingering negative perceptions of Camden and how those perceptions could influence the service's willingness to operate in or deliver to certain neighborhoods in the city.

5. Discussion

5.1. Residents' perceptions of community food insecurity and the grocery gap in shrinking cities

Our community survey and focus groups were instrumental in highlighting the broken food system in Camden, with 85% and 90% of participants, respectively, indicating personal struggles with food security because of the city's grocery gaps. Our survey participants cited distance to full-scale grocery retailers as a key determinant of how often they choose to or can cook at home, as well as their preferences for frozen or pre-prepared meals over fresh ingredients. Prior studies on the physical and geospatial aspects of food environments have identified

similar causal relationships, in that proximity to certain food retailers (especially fast-food chains) directly influences food choice and preference (Fernandez & Raine, 2021; Morland, Wing, Diez Roux, & Poole, 2002b; Zenk et al., 2005) and that closer proximity to full-service supermarkets correlates with healthier purchasing and eating habits (Larson et al., 2009; Morland et al., 2002b; Zenk et al., 2005). It remains important to note, however, that the simple presence of a supermarket does not necessarily mean residents will purchase or eat healthier foods; rather, it often only means their perceptions of access to healthier foods improves (Dubowitz et al., 2015).

While it may be difficult to create a definitive explanation for disparities in food access, the literature on shrinking cities offers compelling insights. Schilling and Mallach (2012) organize the unique challenges of shrinking cities into four broader themes: (1) social and human characteristics; (2) weak market conditions; (3) the built environment; and (4) internal operations. Camden is a textbook case of those social and human characteristics because of its historic population decline. After losing much of its manufacturing base, more upwardly mobile residents fled to the suburbs and left behind a population of poorer minority residents who are at the mercy of the city's lack of educational, employment, nutritional, and political opportunities, resulting in a failing physical environment and inconsistent internal operations. These characteristics have also resulted in an unshakable "territorial stigma" many Camden's residents have internalized (Cairns, 2018), which is at the heart of the city's struggle with disinvestment and urban renewal efforts. This stigma is especially present in the city's multiple failed attempts at siting a large-scale supermarket within its boundaries, also illustrative of the city's weak market conditions.

5.2. Proposed solutions to community food insecurity

Across our survey respondents, focus group participants, and stakeholder interviewees' proposed solutions, there are consistent emphases on adapting solutions to Camden's local circumstances and nurturing local efforts among all sectors—both of which are key focus areas Karpyn et al. (2010) offer for cities across the country looking to replicate Philadelphia's Food Trust initiatives. These proposed solutions of attracting new/improving existing physical grocery retailers, educating residents on local food production, and fostering greater community collaboration and political advocacy echo the recommendations across planning, food systems, and public health literature.

5.2.1. Attracting new and improving existing physical grocery retailers

Although our survey respondents and focus group participants generally supported the idea of attracting a full-service supermarket, community stakeholders were less supportive because of the city's history of disappointment with this endeavor. It would be a safer, more just investment, then, to focus on implementing retail interventions that support existing locally owned stores through improved infrastructure, increased availability of healthy foods, on-site nutrition education, and financial assistance from the local government. When done correctly, these neighborhood retailers can undergo positive transformations without having to attract a major supermarket, obtain new land, or change zoning.

5.2.2. Educating residents about local food production

Increasing the number of physical grocery retailers, both large and small, does not automatically fix a broken local food environment, though. Rather, efforts must supplement those more traditional retailers with methods of local food production, including community gardens, farmers' markets, mobile markets, and urban agriculture. These alternative food methods are a valuable, hyperlocal way to improve food access/security and empower communities to work toward food justice/sovereignty. However, education remains a crucial barrier to residents' participation in local food production, which necessitates the involvement of community organizations or developers (Gripper et al., 2022)

and local government (Horst et al., 2017). These agencies can also assist with connecting local growers with private or commercial buyers to create procurement policies or channels that generate greater exposure and revenue opportunities (Larson et al., 2009; Raja et al., 2008).

5.2.3. Fostering greater community collaboration and political advocacy

Our focus group participants and stakeholder interviewees repeatedly emphasized the need for collaboration among local non-profits, government agencies, academic and religious institutions, and commercial/industrial entities. This kind of widespread collaboration can encourage the alignment of organizational and community goals, the consistent and intentional inclusion of community members, and the opportunity for education. Presenting a united front is instrumental in effecting the kinds of policy changes necessary for achieving long-term food access, security, and justice, especially regarding urban agriculture agendas (Horst et al., 2017). Continued collaboration should work toward dismantling and redistributing the traditional commercial food system in favor of more socially just food systems that adapt to local circumstances, nurture local efforts, and build reliance and control within communities.

5.3. Experiences with existing and perceptions toward new potential online grocery delivery services

In general, our focus group participants reported low levels of previous use concerning existing online grocery delivery services mostly because of their desire for haptic information and their lack of trust in the services and their employees. These two concerns eclipsed the positive experiences a few of our participants reported, as well as the well-documented benefits of such services (Dillahunt et al., 2019; Trude et al., 2022). A need for haptic information and a distrust toward the employees who would be responsible for selecting their groceries were the two main concerns among our non-users. Yet, many of our non-users were not completely unwilling to try an online grocery delivery service, provided they had access to a few key features: (1) hyperlocal production, distribution, and employment opportunities; (2) thorough product information to create an acceptable substitute for examining groceries in-person; (3) fair and competitive pricing and sales; and (4) payment compatibility with food assistance programs (e.g., SNAP and WIC). The second key feature, though, may prove especially difficult given the United States' lack of a federal policy that requires retailers to provide nutritional facts online (Braga et al., 2023).

5.3.1. Perceived benefits of/challenges with adopting a new online grocery delivery service

Focus group participants and stakeholder interviewees frequently highlighted the potential convenience and ease-of-use benefits of an online grocery delivery service for Camden. According to our survey data, 18% of residents in our study neighborhoods rely on alternate forms of travel to conduct their grocery shopping, including carpooling/ride sharing, public transit, or walking/biking. The notion of convenience thus goes beyond merely saving time; it extends to having increased access to fresher and healthier ingredients without the traditional geographic or transportation barriers typically associated with food insecurity in shrinking cities. Some of our stakeholders took these benefits one step further toward achieving food justice, believing a Camden-specific delivery service could be a valuable "economic engine" that would increase residents' purchasing power and stimulate the local food system and economy.

Despite resident and stakeholders' perceptions of the convenience of an online grocery delivery service, many of them tempered their excitement by focusing on logistical challenges like the quality/freshness of groceries, delivery or picking fees, delivery times/flexibility, a lack of haptic information, payment options, and theft. This last challenge was a source of much discussion among our focus group participants, as many of them bemoaned the presence of "porch pirates" across

the city, a colloquial term for petty thieves who canvas neighborhoods looking for packages left unattended. The most unique perceived challenge, however, extends back to Camden's "territorial stigma" (Cairns, 2018), wherein some stakeholders expressed concerns that certain vendors may refuse to participate in the service because of lingering misperceptions about the community.

6. Conclusion

In this study, we sought to better understand residents' perceptions of their local food environment and their challenges with food insecurity in two neighborhoods in Camden, New Jersey. Both Waterfront South and Bergen Square have yet to benefit from many of the food-related revitalization efforts happening in northern neighborhoods in the city. As a result, residents in these neighborhoods must choose between two options, neither of which is ideal from a local food environment perspective: (1) relying on existing corner stores within walking distance, most of which are not participants in Camden's Healthy Corner Store Network, or (2) traveling an average of 10 miles outside the city limits to conduct grocery shopping at full-service retailers in surrounding suburbs. In response to these options, our focus group participants and stakeholder interviewees recommended attracting new physical grocery retailers, both large and small, to various neighborhoods across the city, as well as funding improvements to existing retailers so they can better compete with full-scale grocers. They were also excited about the possibility of expanding local food production and heightened collaboration among Camden nonprofits and city government, although they remained uncertain about the long-term success of a potential online grocery delivery service.

We see three distinct values to our study, all of which relate to our mixed-methods approach. Such an approach allowed us to not only offer multiple ways for residents to share their experiences but also collect novel granular data about what grocery shopping looks like for these residents. In turn, that data allowed us to make respectful and pointed recommendations that align with multiple scholars' calls to adopt a right-sizing approach when addressing the unique needs of shrinking cities (Németh et al., 2020; Schilling & Logan, 2008; Schilling & Mallach, 2012). Despite these strengths, our study encountered two crucial limitations. First, we lacked the time and labor to expand upon our initial food environment scan after receiving additional data from our survey and focus groups regarding residents' dietary/shopping habits. We would have preferred to revisit the stores located in our scan to create more comprehensive inventories of their offerings so we could gain a deeper understanding of whether existing retailers do not meet, meet, or exceed residents' dietary preferences. Second, despite our recruitment efforts, we had a relatively small number of participants in our survey and focus groups (91 and 15 each, respectively). A greater number of participants would have allowed us to present more representative findings.

Ultimately, how physical and digital grocery retailers can assist Camden's local food system requires additional research. While there are numerous vacant sites in Waterfront South and Bergen Square that could be eligible sites for future retailers, many of them would need to be either rezoned or remediated because of the presence of either environmental damage or decrepit building stock. In theory, an online grocery delivery service would bypass these planning/zoning hurdles; however, our findings indicate an online-only model might not be the best solution because many residents may be uncomfortable with having perishable groceries delivered to their homes, prefer the experience of in-person shopping, or have inconsistent access to the internet to submit orders. Thus, a hybrid "click-and-collect" model might be the most logical model because it would offer customers a practical compromise that combines the convenience of online shopping with the personal quality-control of in-person shopping.

References

Braga, B. C., Cash, S. B., Sarson, K., Chang, R., Mosca, A., & Wilson, N. L. W. (2023). The creation of an online grocery store for experimental purposes: A pilot study. *Food Quality and Preference, 109*, 1–12.

Cairns, K. (2018). Youth, temporality, and territorial stigma: Finding good in Camden, New Jersey. *Antipode, 50*(5), 1224–1243.

Caspi, C. E., Sorensen, G., Subramanian, S. V., & Kawachi, I. (2012). The local food environment and diet: A systematic review. *Health & Place, 18*, 1172–1187.

Chrisinger, B. W., Ramos, A., Shaykis, F., Martinez, T., Banchoff, A. W., Winter, S. J., & King, A. C. (2018). Leveraging citizen science for healthier food environments: A pilot study to evaluate corner stores in Camden, New Jersey. *Frontiers in Public Health, 6*, 1–8.

Dillahunt, T. R., Simioni, S., & Xu, X. (2019). Online grocery delivery services: An opportunity to address food disparities in transportation-scarce areas. In *2019 CHI conference on human factors in computing systems proceedings* (pp. 1–15). Association for Computing Machinery.

Dubowitz, T., Ghosh-Dastidar, M., Cohen, D. A., Beckman, R., Steiner, E. D., Hunter, G. P., Flórez, K. R., Huang, C., Vaughan, C. A., Sloan, J. C., Zenk, S. N., Cummins, S., & Collins, R. L. (2015). Changes in diet after introduction of a full service supermarket in a food desert. *Health Affairs, 34*(11), 1–21.

Fernandez, M. A., & Raine, K. D. (2021). Digital food retail: Public health opportunities. *Nutrients, 13*(11), 1–15.

Gripper, A. B., Nethery, R., Cowger, T. L., White, M., Kawachi, I., & Adamkiewicz, G. (2022). Community solutions to food apartheid: A spatial analysis of community food-growing spaces and neighborhood demographics in Philadelphia. *Social Science & Medicine, 310*, 1–9.

Grummon, A. H., Tucker, A. C., Noe, V., Rummo, P. E., Prestermon, C. E., Hall, M. G., Jaacks, L. M., Lippuner, V., & Taillie, L. S. (2023). Consumer behaviour and experiences in a naturalistic online grocery store: Implications for future research. *Journal of Nutrition Sciences, 12*(36), 1–6.

Hollander, J. B., Pallagst, K., Schwarz, T., & Popper, F. J. (2009). Planning shrinking cities. *Progress in Planning, 72*(4), 1–36.

Holsten, J. E. (2009). Obesity and the community food environment: A systematic review. *Public Health Nutrition, 12*(3), 397–405.

Horst, M., McClintock, N., & Hoey, L. (2017). The intersection of planning, urban agriculture, and food justice: A review of the literature. *Journal of the American Planning Association, 83*(3), 277–295.

Karpyn, A., Manon, M., Treuhaft, S., Giang, T., Harries, C., & McCoubrey, K. (2010). Policy solutions to the "grocery gap.". *Health Affairs, 29*(3), 473–480.

Kelly, B., Flood, V. M., & Yeatman, H. (2011). Measuring local food environments: An overview of available methods and measures. *Health & Place, 17*(6), 1284–1293.

Khavarian-Garmsir, A. R. (2023). A systematic review of shrinking cities literature: Lessons from the past and directions for the future. *International Planning Studies*, 1–20.

Klepek, M., & Bauerová, R. (2020). Why do retail customers hesitate for shopping grocery online? *Technological and Economic Development of Economy, 26*(6), 1444–1462.

Kühn, F., Lichters, M., & Krey, N. (2020). The touchy issue of produce: Need for touch in online grocery retailing. *Journal of Business Research, 117*, 244–255.

Kvalsvik, F. (2022). Understanding the role of situational factors on online grocery shopping among older adults. *Journal of Retailing and Consumer Services, 68*, 1–7.

Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: Disparities in access to healthy foods in the U.S. *American Journal of Preventive Medicine, 36*(1), 74–81.

Li, M., & Yuan, F. (2022). Historical redlining and food environments: A study of 102 urban areas in the United States. *Health & Place, 75*, 1–10.

Mallach, A. (2017). What we talk about when we talk about shrinking cities: The ambiguity of discourse and policy response in the United States. *Cities, 69*, 109–115.

Martin, K. S., Ghosh, D., Page, M., Wolff, M., McMinimee, K., Zhang, M., & Nugent, R. A. (2014). What role do local grocery stores play in urban food environments? A case study of Hartford, Connecticut. *PLoS One, 9*(4), 1–11.

Meenar, M. (2015). Nonprofit-driven community capacity building efforts in community food systems. *Journal of Agriculture, Food Systems, and Community Development, 6*(1), 77–94.

Meenar, M. (2017). Using participatory and mixed-methods approaches in GIS to develop a place-based food insecurity and vulnerability index. *Environment & Planning A, 49*(5), 1181–1205.

Meenar, M., Heckert, M., & Adlakha, D. (2022). "Green enough ain't good enough": Public perceptions and emotions related to green infrastructure in environmental justice communities. *International Journal of Environmental Research and Public Health, 19*(3), 1–17.

Meenar, M., & Hoover, B. (2012). Community food security via urban agriculture: Understanding people, place, economy, and accessibility from a food justice perspective. *Journal of Agriculture, Food Systems, and Community Development, 3*(1), 143–160.

Moore, L. V., & Diez Roux, A. V. (2006). Associations of neighborhood characteristics with the location and type of food stores. *American Journal of Public Health, 96*(2), 325–331.

Morland, K., Wing, S., Diez Roux, A., & Poole, C. (2002b). Neighborhood characteristics associated with the location of food stores and food service places. *American Journal of Preventive Medicine, 22*(1), 23–29.

Németh, J., Hollander, J. B., Whiteman, E. D., & Johnson, M. P. (2020). Planning with justice in mind in a shrinking Baltimore. *Journal of Urban Affairs, 42*(3), 351–370.

Noll, S., & Murdock, E. G. (2020). Whose justice is it anyway? Mitigating the tensions between food security and food sovereignty. *Journal of Agricultural and Environmental Ethics, 33*(1), 1–14.

Raja, S., Ma, C., & Yadav, P. (2008). Beyond food deserts: Measuring and mapping racial disparities in neighborhood food environments. *Journal of Planning Education and Research, 27*(4), 469–482.

Rogus, S., Guthrie, J. F., Niculescu, M., & Mancino, L. (2020). Online grocery shopping knowledge, attitudes, and behaviors among SNAP participants. *Journal of Nutrition Education and Behavior, 52*(5), 539–545.

Schilling, J., & Logan, J. (2008). Greening the rust belt: A green infrastructure model for right sizing America's shrinking cities. *Journal of the American Planning Association, 74*(4), 451–466.

Schilling, J., & Mallach, A. (2012). *Cities in transition: A guide for practicing planners*. American Planning Association. https://www.planning.org/publications/report /9026892/.

Shaker, Y., Grineski, S. E., Collins, T. W., & Flores, A. B. (2023). Redlining, racism and food access in US urban cores. *Agriculture and Human Values, 40*, 101–112.

Trude, A. C. B., Ali, S. H., Lowery, C. M., Vedovato, G. M., Lloyd-Montgomery, J. M., Hager, E. R., & Black, M. M. (2022). A click too far from fresh foods: A mixed methods comparison of online and in-store grocery behaviors among low-income households. *Appetite, 175*, 1–9.

Zenk, S. N., Schulz, A. J., Israel, B. A., James, S. A., Bao, S., & Wilson, M. L. (2005). Neighborhood racial composition, neighborhood poverty, and the spatial accessibility of supermarkets in metropolitan Detroit. *American Journal of Public Health, 95*(4), 660–667.