



“I Don’t Want an App to Do the Work for Me”: A Qualitative Study on the Perception of Online Grocery Shopping From Small Food Retailers



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ABSTRACT

Background Small food retailers often stock energy-dense convenience foods, and they are ubiquitous in low-income urban settings. With the rise in e-commerce, little is known about the acceptability of online grocery shopping from small food retailers.

Objective To explore perceptions of the role of small food retailers (bodegas) in food access and the acceptability of online grocery shopping from bodegas among customers and owners in a diverse New York City urban neighborhood with low incomes.

Design In-depth interviews were conducted with bodega owners and adult customers between May and July 2022.

Participants/setting Bodega owners who either had (n = 4) or had not (n = 2) implemented a locally designed online grocery system. Customers (n = 25) were recruited through purposive sampling and were eligible if they purchased at bodegas (>once per month), had low income (household income ≤130% of the federal poverty level or Supplemental Nutrition Assistance Program [SNAP] participants), and owned smartphones.

Analyses performed All interviews were transcribed and analyzed in MAXQDA (Verbi Software, Berlin, Germany), using grounded theory.

Results To owners and customers, bodegas were seen as good neighbors providing culturally appropriate foods and an informal financial safety net. Their perceptions concerning food cost and availability of healthy foods in bodegas diverged. Although most perceived online grocery from bodegas as a positive community resource, they also believed it was not suited to their own community because of the bodega’s proximity to customers’ homes and the low digital literacy of some community members. Customers reported social norms of pride in not using online grocery shopping. Owners and customers believed the service would more likely be used if government benefits such as SNAP allowed payment for online orders. Both suggested improved outreach to increase program awareness and uptake.

Conclusions Online grocery shopping from small food retailers may be acceptable in urban communities with low income and was perceived as a community resource. However, important barriers need to be addressed, such as social norms related to pride in not using online grocery services, digital literacy, program awareness, and allowing SNAP payment for online orders from bodegas.

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FOOD INSECURITY IS THE LACK OF CONSISTENT ACCESS to sufficient food for a healthy life¹ and is experienced by 21% of the US population, with Black (29%) and Hispanic (32%) households having the highest rates of food insecurity in the country.² In New York City (NYC), 48% of adults experiencing food insecurity also suffer from diet-related chronic conditions, such as cardiovascular disease, type 2 diabetes, and hypertension.³ Physical, social, and financial barriers encountered by individuals with low income impede equitable access to sufficient, safe, and

nutritious food, which plays an important role in food and nutrition security, diet quality, and health outcomes.⁴⁻⁹ Many families with low income live in environments where small food retailers are ubiquitous and supermarkets are scarce or inaccessible.¹⁰ These families often do not own a personal vehicle, further limiting their access to supermarkets and subsequently to healthier foods such as fruits and vegetables,^{11,12} which are protective against health risks.^{13,14}

Bodegas (or corner stores) are small convenience stores that have 1 to 2 cash registers and sell a variety of mostly

nonperishable grocery items. In NYC, bodegas are among the default grocery options in many communities with low income because of proximity¹⁵ and convenience.¹⁶ They are often frequented by neighborhood residents five or more times per week.¹⁷ Corner stores play an important role in food acquisition for families participating in the Supplemental Nutrition Assistance Program (SNAP) because they make up 44% of SNAP-authorized retailers¹⁸ and 5% of SNAP benefit redemptions.¹⁸ In general, small food retailers stock few healthy items and an abundance of foods and beverages that are higher-priced and nutrient-poor compared with supermarkets.^{11,12,19} Purchases tend to be high in energy-dense convenient foods such as snacks and sugar-sweetened beverages,²⁰ which have been associated with poor health outcomes.²¹

Given the importance of small food retailers such as corner stores and bodegas in underserved communities, many interventions have been designed to increase their healthy offerings and improve store food environments.^{22,23} In NYC, for example, the Healthy Corner Store Initiative, known as the *Shop Healthy NYC!* program, promotes healthy foods using a social marketing approach at the point-of-sale²⁴ and has increased stocking and sales of healthy foods in small food retailers.^{22,25} During the COVID-19 pandemic (hereafter referred to as *pandemic*), online grocery shopping from supermarkets became more popular, including in neighborhoods with low incomes.²⁶ Concurrently, amidst supermarket supply shortages caused by the pandemic,²⁷ small food stores became the primary source of grocery staples such as milk, eggs, and bread for many individuals.²⁸ Therefore, more research is needed on how the food system's adaptation to the rise in online grocery shopping influenced consumers and owners of small food retailers in urban communities of low-income.

Online grocery shopping and delivery gained popularity in recent years in part because of the pandemic and the expansion of the SNAP program to online retailers.^{29,30} However, e-commerce has grown mainly for large food retailers, and many barriers, such as delivery fees, remain for individuals with low income in accessing this service.^{31,32} Early in the pandemic, an app was launched in one urban community with low income in NYC that delivered food and beverages exclusively from local bodegas to their customers. Although multinational companies such as UberEats and Grubhub currently feature some bodegas on their platforms, MyBodegaOnline sought to specifically connect customers to their local shops.³³ This service was launched in collaboration with bodega owners in part to streamline frequent phone orders that bodega owners often prepare and deliver to their local customers. A total of 8 bodegas, located in the Bronx, were partners. By offering convenient and quick delivery times, no service or delivery fees, and the ability to use multiple payment types, including cash at delivery, the app aimed to address the specific needs of consumers with low income as identified by previous studies.^{31,32} However, the service had a low uptake, and it was discontinued in May 2022.

In spite of the near across-the-board rise in food e-commerce, no study to our knowledge has examined the acceptability of online grocery shopping and home delivery of food and beverages from small food retailers. Previous studies with consumers living in urban communities with

RESEARCH SNAPSHOT

Research Question: How do small food retailer owners and their customers perceive the role of bodegas and online grocery shopping in accessing food in an urban community with low income in New York City?

Key Findings: In this qualitative study with 25 customers and six store owners, bodegas were seen as good neighbors providing culturally appropriate foods and a food safety net. Online grocery shopping from bodegas was perceived as a potential positive community resource for some people, although it did not resonate with many customers because of store proximity, limits to digital literacy, and shopping norms. Owners and customers recommended the use of SNAP benefits online and stronger community outreach to increase the uptake of the service in this community.

low income have proposed the necessity of expanding SNAP benefits to additional food retailers as an online payment.^{29,34} To help fill existing gaps in the literature, this study used qualitative methods to (1) gather perceptions from both customers and owners of small food retailers in the Bronx related to food access and (2) better understand the acceptability of online grocery shopping from small food retailers located in an urban setting with low income among both customers and owners of small food retailers.

METHODS

The use of qualitative methods seemed most appropriate to the study's focus on exploring the bodega owners' and customers' perspectives on the role of bodegas in food access and the acceptability of an online grocery shopping service from bodegas. Because these data are not amenable to counting, in-depth interviews provide more nuanced and comprehensive insights than quantitative structure-survey methods.³⁵ The members of the research team involved in data collection and interpretation were racially diverse and female with graduate-level training and experience in qualitative methods, sociology, food security, nutrition, and health. The team included bilingual speakers in English and Spanish, which were the predominant languages in the study setting. The team also included members raised in the target community, although none had prior connections with any of the study participants.

Setting

The Bronx is the northernmost borough of NYC, with a diverse and multiethnic population. It is the poorest of the city's boroughs. Of its almost 1.5 million residents, 24% live in poverty, which is above the city (17.3%) and country (11.6%) estimates.³⁶ Among NYC boroughs, the prevalence of obesity is highest in the Bronx (31.7%), with 17% of residents reporting not consuming fruits and vegetables in the past day. One in two residents of the Bronx (51%) participates in SNAP.³⁷

The disproportionately lower access to social services and investment in the Bronx compared with the rest of the city was spurred by limited opportunities for homeownership, the dismantling of public infrastructure,^{38,39} and the closures of supermarkets in underserved communities. This has

greatly shaped food access in the Bronx and is characteristic of retailer redlining.⁴⁰ The South Bronx has approximately 571 food establishments, with bodegas accounting for the largest share of food retailers ($n = 265$; 46%), followed by fast-food restaurants ($n = 107$, 19%) and only 26 supermarkets (5%).²⁵ Of the more than 16,000 bodegas in NYC, most are owned and operated by immigrants, mainly Latin Americans (85%).⁴¹

Recruitment

Bodega Owners. At the time the app was discontinued, a total of 8 bodegas were listed in the MyBodegaOnline app, all located in the Bronx. The research team used convenience sampling⁴² to select 2 of the South Bronx stores affiliated with the online grocery app based on their close proximity to lower staff burden. The research team visited the stores in person, invited the owners to participate in the study, and asked for permission to recruit customers. The remaining six MyBodegaOnline bodegas were contacted via phone, and their owners were invited to participate in the interviews. Of those, 1 bodega was permanently closed, 2 bodega owners did not respond after 5 contact attempts, and 3 completed in-depth interviews. Additionally, the owners of 2 non-MyBodegaOnline bodegas in the same community (within a 0.2-mile buffer) were also invited to participate in the study during in-person visits to the stores. One bodega owner was deemed not interested after 5 contact attempts and therefore was not included in the study. A total of 10 bodega owners were contacted for recruitment into the study (8 MyBodegaOnline and 2 non-MyBodegaOnline). Eligibility criteria included being an adult (≥ 18 years old) and a manager or owner of a bodega.

Bodega Customers. Recruitment of bodega customers occurred on weekdays from May 2022 to July 2022, using purposive criterion sampling.⁴³ Heavily trafficked areas in the same neighborhood as the bodegas participating in this study were canvassed. Recruitment sites included the outside area of a local settlement house and human service organization, participating bodegas, a nearby fruit and vegetable cart, and a GrowNYC farmers' market. The goal was to interview 25 to 30 bodega customers or until information power (defined by the adequacy of topics discussed and quality of the dialogues)⁴⁴ and data saturation (until no new themes could be identified) were reached.^{45,46} Adults (≥ 18 years old) who self-identified as the main food purchaser for the household (shopped more than once per month), frequently shopped at bodegas (at least once per month), owned a smartphone, and met income eligibility criteria (self-reported annual household income of $\leq 130\%$ of the federal poverty level or enrolled in SNAP) were invited to participate in in-depth interviews. Smartphone ownership was an eligibility criterion because the study aimed to explore perceptions of online grocery shopping, and prior literature has shown that consumers with low income usually shop for groceries online using a phone.^{32,47} Research assistants distributed flyers to pedestrians advertising the study and hung flyers next to the cash register or in the window or door of the participating bodegas. The flyers were written in English and contained QR codes for a Qualtrics survey to determine customers' eligibility and availability for an in-depth interview.

Data Collection

Bodega Owners. In total, 6 bodega owner interviews were conducted, each 1 scheduled at the owners' requested time. The team conducted 1 on-site interview and 5 phone interviews with owners. The interview guide was created in May 2022. It was informed by a previous interview guide developed to understand the perception of online grocery shopping among grocery store managers and adapted for the purpose of this study with bodega owners in relation to an online bodega app.⁴⁸ The adapted guide was not pretested and included questions on food purchasing in bodegas, the risks and benefits of online grocery shopping, and the role of the bodega in community health (Fig 1). The interviews averaged 32 minutes in length (range, 23–40 minutes) and were conducted by A. C. B. T. and a research assistant. Interviews were recorded with the owner's consent. Interviews were conducted in English ($n = 3$) and Spanish ($n = 3$). Information regarding bodega owners' demographic characteristics (race/ethnicity, age, and gender) was not collected. All bodega owners were offered a \$10 gift card in appreciation for their time.

Bodega Customers. The flyers distributed to pedestrians were written in English and contained a QR code for a Qualtrics survey to determine customers' eligibility, availability for an in-depth interview, and a 2-part baseline assessment. Interested participants scanned the QR code guided by the research team during recruitment. Although both flyers and the Qualtrics survey were available only in English, bilingual research staff approached interested individuals who preferred to speak Spanish and were able to explain the study procedures and assist in the completion of the survey when needed. The QR code led to a screener, which contained 10 questions on background information (ie, age, self-identified gender, education, self-identified race/ethnicity, household size, children in the household) in addition to questions to ascertain eligibility (smartphone ownership, household food purchase frequency, food purchasing frequency in bodegas, monthly household income below or above the poverty line, and SNAP participation). Participants self-reported their race/ethnicity from the following list: White or Caucasian, African American or Black, Hispanic or Latino, Asian or Asian American, Middle Eastern or North African, American Indian or Alaska Native, or Native Hawaiian/Pacific Islander, or other (the option to specify was not available). The survey included these race/ethnicity categories to inform the interpretation of views and perceptions of interviewees while taking into consideration sociopolitical, historical, and cultural realities of the various identities.⁴⁹ The research team sent a link to the second part of the baseline survey (another Qualtrics survey) that assessed grocery shopping habits and food security in the past 12 months, using the validated US Department of Agriculture (USDA) 6-item household food security module.⁵⁰

An interview guide was created initially in English in May 2022 by A. C. B. T. and N. B. B., then translated into Spanish. The interview guide included questions on general and bodega-related food purchasing behaviors, the role of the bodega in community health, online food ordering from supermarkets and bodegas and their benefits and challenges, general SNAP experiences, and the use of SNAP in bodegas

Topic of discussion	Bodega owners	Bodega customers	Member check
Bodega food environment	<ul style="list-style-type: none"> • What are the foods and beverages that are typically offered in your store? • How are foods and beverages procured? 	<ul style="list-style-type: none"> • What are the foods and beverages you typically get at a bodega store? • How have the food stores changed in your community since you lived here? 	<ul style="list-style-type: none"> • Most people reported purchasing items such as water, sandwiches, and milk. In your opinion, is there anything missing from this list? • Why do you think people usually buy water from bodegas? What about sandwiches? And milk?
Role of bodega in the community	<ul style="list-style-type: none"> • As a bodega owner, what role do you think bodegas play in the community? • How do you think the foods and beverages offered by bodegas influence, if at all, the community health? 	<ul style="list-style-type: none"> • What does a bodega mean to your community? • How do bodegas influence the health of your community? 	<ul style="list-style-type: none"> • Some people in the community thought bodegas are valuable to the community, but others thought they “take advantage” of the community. • How do you feel about this? • In what ways do you think bodegas are valuable to the community? • In what ways are they taking advantage of the community?
Online grocery shopping	<ul style="list-style-type: none"> • — 	<ul style="list-style-type: none"> • What are your thoughts about online grocery shopping? • Do you know of any options for online grocery shopping where you live? 	<ul style="list-style-type: none"> • What are your thoughts about online grocery shopping? • What are the reasons this may be beneficial or not to your community?
Online bodega app for food shopping	<ul style="list-style-type: none"> • How do your customers shop at your store (eg, in-person, phone, app, etc)? • Can you tell us the story about how you became involved in <i>My Bodega Online App</i>? 	<ul style="list-style-type: none"> • Have you ever purchased food on the phone or on an app from a bodega? • What would be the benefits to you or your community if an app 	<ul style="list-style-type: none"> • In our interviews, we noticed customers were resistant to order bodega items online because going to the bodega to get their items seemed faster. What do you think makes going to the bodega faster than ordering online from bodegas?

(continued on next page)

Figure 1. Summary of key questions asked to bodega owners and bodega customers during in-depth interviews and member checking with customers in a qualitative study on the perception of online grocery shopping from small food retailers.

Topic of discussion	Bodega owners	Bodega customers	Member check
	<ul style="list-style-type: none"> • Can you tell me how long you've been offering online ordering for your customers? • What are some barriers to using the app, as a bodega owner? 	<p>existed to purchase foods online from your bodega?</p> <ul style="list-style-type: none"> • What would be the drawbacks, if any, of a bodega app that delivers food to your door? 	<ul style="list-style-type: none"> • It seems like people in the community take pride in doing their work themselves, and might feel ashamed to have someone else/an app do it for them. What are your thoughts on this?
SNAP	<ul style="list-style-type: none"> • Please describe the process when a customer wants to use their SNAP EBT card at your store. • What support would you need to navigate the process of transitioning to accepting online SNAP orders in your store? 	<ul style="list-style-type: none"> • What is the experience like using SNAP benefits? • What are your thoughts on using SNAP benefits for online grocery purchases? • How do you think the SNAP program could be improved? 	<ul style="list-style-type: none"> • When asked about using SNAP benefits at bodegas, most people said it was a simple process. In what way does this sound true to your experience, or those of people you know? • Some people did mention that they sometimes struggled with using SNAP benefits at bodegas, because despite the presence of SNAP signs, certain bodegas actually did not accept EBT payments. What are your thoughts on this? • Many of our participants expressed that expanding the use of SNAP for online or phone orders, including at bodegas, would be a benefit to them and the community. In what ways do you agree or disagree?

Figure 1. (continued) Summary of key questions asked to bodega owners and bodega customers during in-depth interviews and member checking with customers in a qualitative study on the perception of online grocery shopping from small food retailers.

(Fig 1). The interview guide was not pilot-tested, but minor iterative modifications were made to incorporate insights learned from previous interviews and to tailor the question guides to capture all identified themes, consistent with a grounded theory approach.⁵¹ Interviews averaged 20 minutes in length (range, 12–54 minutes) and were conducted by A. C. B. T., N. B. B., S. L., and L. A. T., in English (n = 20) and Spanish (n = 5). Interviews were conducted privately via phone and were audio recorded with the participant's consent. A \$10 Amazon gift card was e-mailed to every individual in appreciation for their time. A total of 103 adults were screened, and 48 participants (bodega customers) were eligible for an in-depth interview. Twenty-five customers completed the in-depth interview (Fig 2).

Data Analysis

Throughout data collection, researchers filled out debrief documents after each interview to summarize the discussion, identify repeated salient themes and note the identification of new themes after the initial coding process.⁵¹ The consistent recurrence of similar themes and lack of newly identified themes were considered signs of data saturation and informed the conclusion of data collection.⁴⁴⁻⁴⁶

All interviews were transcribed by a team member or by the online transcription service [Rev.com](https://www.rev.com) and double-checked by a team member to ensure the accuracy of the transcription. Interviews conducted in Spanish were first transcribed in the original language and then translated into English by

the interviewer, then double-checked against the original Spanish audio by a second team member who was fluent in Spanish for accuracy.

For coding the interviews with bodega owners, researchers built on the codebook generated for consumers after independently conducting a line-by-line coding of one bodega owner transcript⁵¹ (A. C. B. T., N. B. B., Z. N. R., and C. D.). Next, 2 researchers (N. B. B. and C. D.) independently applied the bodega owner codebook to 2 transcripts to consolidate the codebook. The 2 coders met to discuss the coding of each transcript, addressing any discrepancies until a mutual consensus was reached. The remaining 3 transcripts were independently coded and cross-checked. At the end of the process, all coded transcripts (bodega owner and customers) were reviewed by 1 member of the analytical team to ensure consistency.

To develop a codebook for the consumers' interviews, three researchers (A. C. B. T., N. B. B., Z. N. R.) independently coded one transcript, using the interview guide and research questions to generate an initial code. Researchers used a line-by-line coding approach to identify keywords and topics derived from the data using a grounded theory approach to unveil what was most important to participants while aiming to put aside their preconceived ideas.⁵¹ Next, 2 coders (N. B. B. and C. D.) independently applied the codebook to a second transcript to refine existing codes and develop new codes. On double analysis of the second transcript, the coders met to discuss and consolidate the codebook and re-applied it to the first transcript. Coding disputes were resolved by the entire

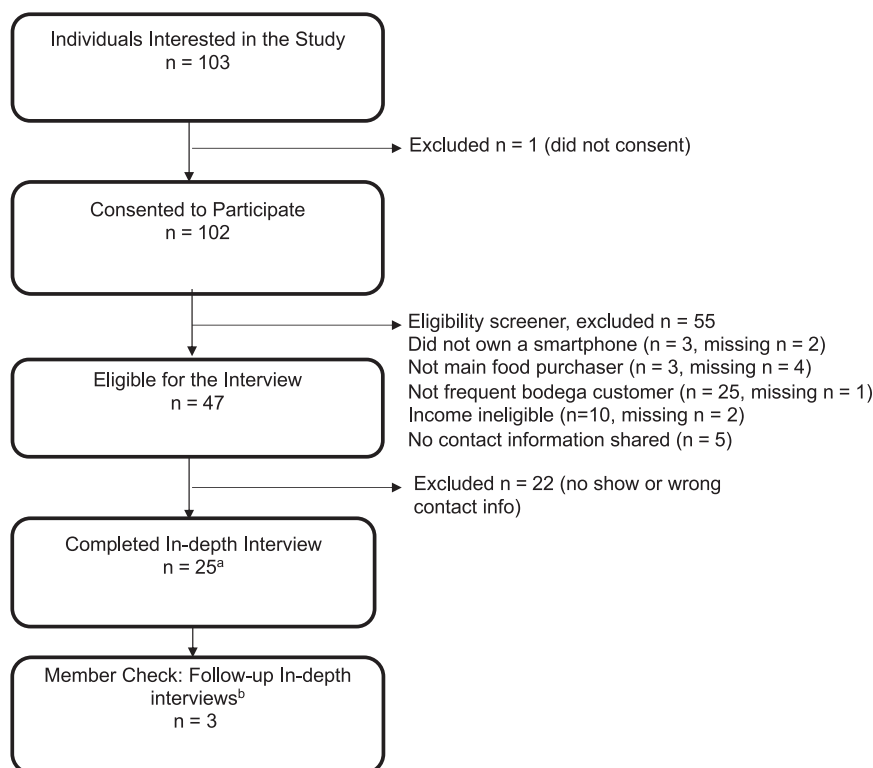


Figure 2. Flow diagram of bodega customers in this qualitative study on the perception of online grocery shopping from small food retailers. ^an = 4 did not complete part two of the demographic survey. ^bMember check was conducted to ensure the research team's interpretation of the findings was consistent with the views and experiences of the participants. Individuals who had previously agreed to be recontacted participated in a follow-up in-depth interview.

data analysis team. The codebooks included a brief description of each code, examples of when to use or not use the code, and an exemplary quotation. Using the refined codebook, the same pair of researchers double-coded 4 transcripts until no discrepancies emerged. The remaining 21 transcripts were independently coded and cross-checked by a second researcher.

Although transcripts were not returned to participants for comments or corrections, a member check interview guide was generated based on a preliminary analysis of the customer data to ensure that the team's interpretation was consistent with the views and experiences of the participants (Fig 1). Member checking is a process in which researchers ask participants for their input on data analysis and interpretation.⁵² Interview questions invited interviewees to reflect on the interpretation of the data based on the main themes identified in a preliminary analysis, using probes such as "How do you feel about this conclusion?"; "In what ways do you think people you know might feel that way?"; and "In what ways you might disagree with it?". Three bodega customers who had previously agreed to be recontacted participated in a follow-up in-depth interview for member checking. Based on the member check, bodega customer participants agreed that the main results captured the perspectives of their urban community with low income.

The MAXQDA software⁵³ was used for the qualitative analysis in the focused coding stage, using separate, offline versions of the platform to maintain confidentiality in coding before consolidation. During this process, codes and concepts were revised, reviewed, renamed, added, and deleted.⁵¹ Relevant themes for both consumer and owner interviews, identified in the theoretical coding stage, include Bodegas as Neighbors, Cost of Foods, Online Grocery Shopping from Bodegas, Relative Advantages and Disadvantages, and Service Recommendations.

Ethics

This study was conducted according to the guidelines laid down in the Declaration of Helsinki, and all procedures involving human subjects were approved by the New York University Institutional Review Board (IRB-FY2022-6394). The reasons for doing the research were described to all potential participants during recruitment and before the interviews. Online informed consent was obtained from all participants once for the online surveys (online screener and demographic survey). Verbal informed consent was obtained from all participants before the interviews.

RESULTS

Bodega Owners

None of the bodega owners interviewed reported having been a part of a Healthy Retailer Initiative. On average, owners had almost two decades of experience in the bodega business (median, 21.5 years; range, 5–30 years).

Bodega Customers

Nearly half of the customers interviewed were older than 50 years ($n = 12$ of 25), and one third were between 18 and 29 years ($n = 8$ of 25). Twenty of 25 were female ($n = 20$ of 25).

Among those with complete food security data ($n = 20$ of 25), 11 were classified as having low or very low food security ($n = 11$ of 25) (Table 1).

Role of Small Food Retailers in Food Access in an Urban Community with Low Income

Three primary themes and four associated subthemes were identified from the interviews with bodega owners and customers in relation to the role of small food retailers in the community. Illustrative interview quotations are included in Table 2 to depict interpreted themes. The main themes included (1) bodegas as good neighbors, (2) cost of healthy foods in bodegas, and (3) bodegas and community health.

Bodegas as Good Neighbors

Bodega owners considered themselves to be a part of the neighborhood, often playing roles beyond selling goods, such as holding on to their customers' keys or listening to their customers' personal stories and situations.

Culture. Owners mentioned they decide what foods to carry in their store based on what their customers want, and as a result, they often cater to the cultural preferences and habits of their neighbors (Fig 3). Similarly, to many customers, bodegas were perceived as an important social, cultural, and occasionally, financial asset for the community. According to bodega customers, bodegas provide a gathering space for community members, often around culturally specific items and staple ingredients, thereby enforcing relationship-building between bodega owners and their customers through shared culture and language.

I'm Dominican. We cook every day, and we do have bodegas over there. A lot of them, which we call it 'colmado' (convenience store) and it's basically like I feel home. (chuckles) [...] When I first came, when I don't want to cook, I just go there and the food that they have is really good. It's a Dominican place, so it's the same seasoning. (R2021, female, 18–24, African American, English, Customer)

Financial Safety Net. Bodega owners felt they provided a food safety net for the community by allowing customers to pay on informal lines of credit without the need for a credit card and by occasionally offering flexible pricing based on the financial circumstances of a particular customer. Customers also felt that bodegas acted as a valuable safety net to the community, noting that some bodega owners provided multiple options for payment, such as store credit and if necessary, lower prices, which corroborates perceptions shared by owners.

If they know your situation or whatever the case may be, they may say, "Okay, you know, pay me tomorrow." Or instead of paying \$2.50, "Okay, I'll let it go for \$2." And they only have \$2. So, it gives them a sense of community, a sense of reassurance for a lot of people in my community. (R2018, Female, 25–29, African American or Black, English, Customer)

Table 1. Characteristics of bodega customers from households of low-income who participated in a qualitative study on the perception of online grocery shopping from small food retailers (n = 25)

Demographics	
Age, years, n (%)	
18–29	8 (32)
30–39	4 (16)
40–49	1 (4)
50 or older	12 (48)
Gender, n (%)	
Female	20 (80)
Male	4 (16)
Nonbinary	1 (4)
Race/ethnicity, n (%)	
African American or Black	7 (28)
Hispanic or Latino	13 (52)
Other ^a	2 (8)
More than one race/ethnicity ^b	1 (4)
Missing	2 (8)
Education,^c n (%)	
Below college	17 (68)
Completed college	8 (32)
130% Federal Poverty Line, n (%)	
At or below	23 (92)
Above	2 (8)
Household size: median (range)	
	3 (1–7)
Household composition, n (%)	
With children (< age 18)	18 (39)
Without children (< age 18)	28 (61)
Food security,^d n (%)	
High food security	1 (4)
Marginal food security	8 (32)
Low food security	5 (20)
Very low food security	6 (24)
Missing	4 (20)
SNAP^e participation in the past 12 months, n (%)	
Yes	10 (40)
No	15 (60)

(continued)

Cost of Healthy Foods in Bodegas

All bodega owners mentioned that they source items such as water, fruits, vegetables, and other essential cooking products from wholesalers such as Jetro, BJ's, and Sam's Club themselves, which is a task that takes up a lot of their time. One

Table 1. Characteristics of bodega customers from households of low-income who participated in a qualitative study on the perception of online grocery shopping from small food retailers (n = 25) (continued)

Demographics	
Online grocery shopping experience, n (%)	
Ever shopped	8 (32)
Never shopped	13 (52)
Missing	4 (16)

^aOther response option was a prespecified survey response category with race/ethnicity not specified.

^bParticipants who selected more than one of the provided race/ethnicity groups were categorized as "Multiracial."

^cHigh school or below (n = 6); General Education Development (GED) (n = 5); Some college (n = 6).

^dUSDA 6-item Household Food Security Survey.⁵⁰

^eSNAP = Supplemental Nutrition Assistance Program.

store owner described a WhatsApp group with approximately 200 *bodegueros* [bodega owners] where they share tips about where to get certain items for their stores and inform each other about stocking and pricing issues at regular wholesalers. Bodega owners also indicated that they try to sell products and groceries that their community can afford, but inflation has made this harder.

In contrast, many customers reported perceiving bodegas as exploitative when it comes to the cost of items. Customers believed that bodegas took advantage of the community by stocking limited options at high prices. They explained that often produce in bodegas sits on the shelf for long periods, because of their higher prices compared with supermarkets, lowering the freshness and perceived quality (Fig 4). When low-quality offerings are combined with disproportionately high prices, customers noted that it becomes harder for the community to access fresh produce and food.

I think it's just for convenience, but it's not healthy because it's not healthy foods in there, everything is expensive. (R2019, Female, 55–59, African American, English, Customer)

Bodegas and Community Health

Negative. Owners did not comment on how foods and beverages available in their stores impacted the health of the community directly. Instead, they viewed decisions concerning the healthiness of purchases as the responsibility of their customers alone.

Let's say... it's all in the person's way of eating and the way they've been raised, because we have fried chicken [and] we have oatmeal in the morning. A lot of people don't go for the oatmeal, they go for the [energy drink], 44 grams of sugar in a [energy drink]. Avena [oatmeal] is way healthier. It's going to give you energy. It's oats [...it] even costs less... it costs \$1.50 for a small box. [An energy drink] is what? \$2.25 for 8 ounces. (R1006, male, bodega

Table 2. Themes and subthemes identified in a qualitative study on the perception of online grocery shopping from small food retailers.

Domain	Theme	Subtheme	Bodega Customers	Bodega Owners
Role of small food retailers in food access in an urban community with low income	Bodegas as good neighbors	Culture	<i>I feel like I wouldn't buy a regular zucchini at a supermarket. I feel it has to be the Mexican zucchini (chuckles). I remember one time my mom told me to buy a zucchini, and I bought the American one. She was like, "What's this?" (both chuckles). And I was, "This is the zucchini. You told me to buy this." (laughs) And she's like, "No, no, no, you have to buy this one." (R2012, female, 18–24, another race or ethnicity)</i>	<i>Well, we got the mangu (smashed plantains), we got the red beans and rice with chicken, we got the sancocho (meat and vegetable stew), and... what else? We got the bacalao (dried, salted cod), a lot of Dominican people like it. The chicharrón (fried pork belly/rinds), mofongo (mashed plantains). (R1002, male, 15 years in the business, affiliated with MyBodegaOnline)</i>
		Financial safety net	<i>If you need something at the time, you don't have the money, they [bodega owners] will let you have it and then you pay them at a later date or something like that. (R2023, female, 50-54, African American, English)</i>	<i>I would say [bodegas are] a good neighbor. Sometimes people don't have the funds and, you know, sometimes say, "Hey, can I owe you five bucks? I'll pay you back on my payday." (R1001, male, 18+ years in the bodega business, not affiliated with MyBodegaOnline)</i>
	Cost of healthy foods in bodegas		<i>Because sometime, if I'm running out of something, I don't want to walk to the supermarket. I go to the bodega. Even though it is more expensive than the supermarket. Milk is expensive, it's more expensive than the supermarket. Vegetables, too. For example, if I buy some lettuce, lettuce are more expensive at the bodega than at the supermarket. Salami, plantains... (R2005, female, 65 or older, other race or ethnicity, English)</i>	<i>We're in the community where a lot of people depend on [government] benefits. But I know certain things could be pricey nowadays. A carton of eggs right now is \$4. It used to be \$2. So, we have to get things that is affordable for this type of community. (R1001, male, 18+ years in the bodega business, not affiliated with MyBodegaOnline)</i>
	Bodegas and community health	Negative	<i>I know a lot of bodegas, they don't have any healthy options, so it's just unhealthy snacks and stuff, and they are cheaper than a lot of fruits and vegetables, so kids that don't have a lot of money, they will go for the cheaper option, which is very unhealthy. (R2025, female, 18–24, Hispanic, English)</i>	<i>I can't do it myself. I [can't] say, "Okay, I'm not going to sell Snapple, it has too much sugar." But, if we [bodega owners] get together, it will definitely be different...But we need to all get together. (R1006, male, 27 years in the bodega business, affiliated with MyBodegaOnline)</i>

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Table 2. Themes and subthemes identified in a qualitative study on the perception of online grocery shopping from small food retailers. (continued)

Domain	Theme	Subtheme	Bodega Customers	Bodega Owners
Perceptions of the acceptability of online grocery shopping from small food retailers in an urban community with low income	Online grocery shopping from bodegas as a community resource	Positive	<i>They [bodegas] provide now the salads, and the smoothie. It's like, if you're not doing that then you might as well not even be up in here because people [in this community] are really concerned about having smoothies, and different types of milks [...] So there has been change with that, as far as providing more healthy choices. (R2015, female, 50–54, other race or ethnicity, English)</i>	<i>I'm going to say [I would like to] try to get healthier things. More fruits, vegetables and less sweeter things. I carry a little bit of everything, so it's up to the people too. What choice they want to make. Well, sometimes they take whatever is faster, you know. That's all. That's why sometimes not a lot of people eat that healthy. (R1002, male, 15 years in the business, affiliated with MyBodegaOnline)</i>
			<i>Mostly, like, middle-aged people; more elderly people; people who live in, like, buildings with no elevator, walk-up, that kind of thing, you know. Have stuff brought up rather than having to go to the stores and have to walk stairs. There's a lot of buildings that don't have elevators, that go up, like, four floors, that have people living in them that have to use their cart to drag up I have to help a lot of neighbors with that, too. (R2016, male, 50–54, African-American)</i>	<i>It was an application that I thought could be beneficial for the bodega owners because I think it was born from the bodega owners' sentiments (needs). It was a simple application and that they were only going to use it in the, in the same ones that were already practically doing, a lot of bodegas already have delivery, with the application it could be a little easier for the customer and for the bodega. (R1004, male, 15+ years in the bodega business, affiliated with MyBodegaOnline)</i>
	The proximity of bodegas to customers' homes		<i>[...] what is the point? So [the food] comes, but it would take forever. So, you just go to the bodega yourself, [...] So that type of stuff is going to be a drawback. Because, sometimes, you kind of think it's going to come faster. (R2011, female, 50–54, Hispanic or Latin American)</i>	<i>If he's [bodega staff] here, he'll stop whatever he is doing, and take out the delivery to make it quick. I would say if it's close by, five, seven minutes, we got to give the people food. Sometimes, they're outside doing a delivery, so that they will take a little bit longer because of that reason. (R1006, male, 27 years in the bodega business, affiliated with MyBodegaOnline)</i>
	'Us' versus 'them'	Social norms	<i>I would probably say that would kind of make my kids a little bit more lazy, you know. (chuckle) Because they would rather stay home all the time and not be out [when] anything happens. (R2011, female, 50–54, Hispanic)</i>	<i>Well, there something different, something try to get a different type of people in the store. You get more customers like that.. a new generation of customers. They don't like coming out and stuff like that, want to stay home. I thought it was going to be a way better idea to do it like that. (R1002, male, 15 years in the business, affiliated with MyBodegaOnline)</i>

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Table 2. Themes and subthemes identified in a qualitative study on the perception of online grocery shopping from small food retailers. (continued)

Domain	Theme	Subtheme	Bodega Customers	Bodega Owners
		Digital literacy	A lot of people in my building are immigrant families, and their children would not be able or not know how to use this app. Because my mom would say, "You just have to go on the website, and then you request the food and x, y, and z." And they'll say, "Well, I don't know how to use that. I don't know how to use a computer, I don't know how to use an app." And I would have to do it for them. And then it was like every Wednesday, I felt I was doing applications for people that were in my building. And we all became comfortable because of this one common thing that we didn't know how to do, and that was ordering food online. (R2012, female, 18–24, another race or ethnicity)	We never got an order. It [MyBodegaOnline] was a good idea, it was just from the wrong place... Listen, it's a great idea, but the problem is, I'm in the Bronx. I'm in the South Bronx. Most of these kids don't have a computer at all, and if they do, it's not turned on. Anybody in the neighborhood has my number. If they want a delivery, it's easier for them to call than to go into a computer, turn on an app— it's too hard. (R1006, male, 27 years in the bodega business, affiliated with MyBodegaOnline)
	Recommendations for online grocery shopping from bodegas	Cost	Nobody really wants to do [grocery delivery], because people in the neighborhood, they don't really have no money like that. (R2009, female, 25–29, African-American, English)	We just ask them [customers], but we don't enforce it that much. [...] Even on the flyer, we say minimum for delivery is \$10. But if they call in for a \$7 order, we take it out to them."(R1006, male, 27 years in the bodega business, affiliated with MyBodegaOnline)
		App design	[I would like to see] the delivery time, or maybe the steps to see where the person who's delivering is, how far to the apartment or the house (R2009, female, 25–29, African American, English)	That [app] could have been better if there were less steps for the person to do because the people already want things to be one, two, three, like fast. (R1004, male, 15+ years in the bodega business, affiliated with MyBodegaOnline)
		SNAP Online	If it [a bodega food delivery app] had Apple Pay, pay with cash. I think cash would be better. Because sometimes, people don't have money in their card, or they don't have time to put money in their card. Or sometimes, people don't have money, so they use EBT. So, they should have cash or EBT. (R2020, female, 35–39, African American, English)	Because, especially right here, I got a lot of elderly people that order a lot of meats and a lot of produce, and they could barely come in the store, and they use their EBT card. And if they don't got cash, they can't, and we can't make the delivery because we don't got no device to accept the payment if we take the delivery over there. (R1002, male, 15 years in the business, affiliated with MyBodegaOnline)

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Table 2. Themes and subthemes identified in a qualitative study on the perception of online grocery shopping from small food retailers. (continued)

Domain	Theme	Subtheme	Bodega Customers	Bodega Owners
		Outreach	Well, [for me to use the app] it would just take, basically, the availability of even information. Like, what type of store is available, what do they have. You know, the flyers, or you get the ads on your phone, or whatever. But I don't have information to do it. (R2016, male, 50–54, African American, English)	He [MyBodega app developer] tried flyers. If you do flyers in this area, you should—I would've tried with small companies like Joni's, that I could tell them, "Listen, can we do an app? Can we do ads that pop up with people, in certain areas, where that—'okay, my target is computers.' I want people using a computer. Why don't I pop up ads where there's a computer instead of having a flyer on a door that was missed? (R1006, male, 27 years in the bodega business, affiliated with MyBodegaOnline)
	Consequences of online grocery shopping from bodegas		I think the drawbacks would be you would kind of miss that community portion [of the bodega], because you're not going in and seeing the actual person anymore, because it's being delivered to you. So, I think it would be a little bit a loss of touch in that sense. But I think you would win in that way too because you're still supporting a business, but you're not being able to go to the person in the corner store and say, "Hey, how you doing? Good morning!" You're not building that in the community, but you're still supporting the business. (R2018, female, 25–29, African American, English)	The customers really like the part that you can pay with a credit card, and we can deliver it to them. Because right now, that's the only way we do delivery. We don't accept credit cards when we do delivery. (R1002, male, 15 years in the business, affiliated with MyBodegaOnline)

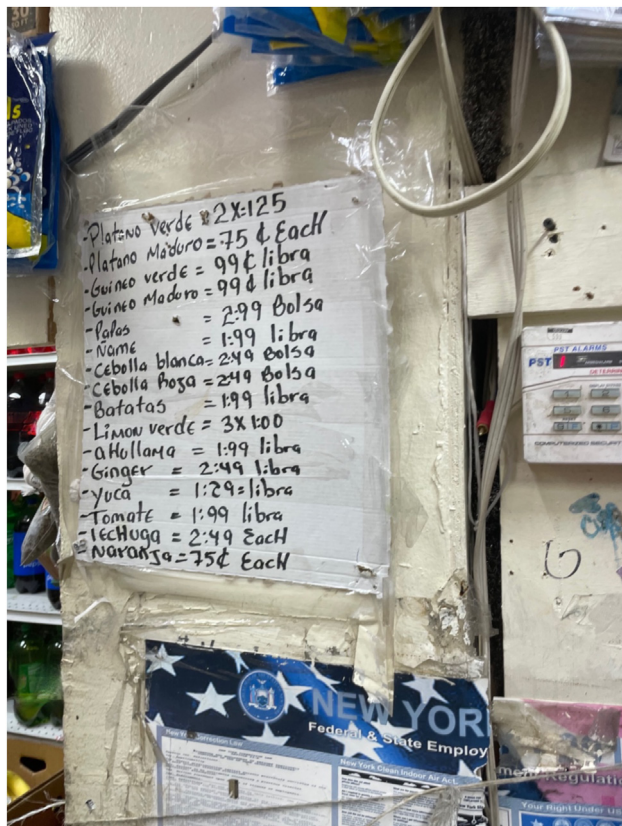


Figure 3. Menu of a Hispanic-owned bodega located in the South Bronx part of this qualitative study on the perception of online grocery shopping from small food retailers.

owner, 27 years in the bodega business, affiliated with MyBodegaOnline)

Conversely, bodega customers regarded the large number of processed food options in bodegas as negatively influencing community health, as they perceived processed foods in bodegas to be generally less costly and to offer more convenience, compared with the high costs of fresh produce. Many bodega customers connected the availability of snack foods such as chips, candies, and inexpensive grab-and-go options to poor outcomes for children's health in the community. The proximity of bodegas to schools, the perceived lack of focus amongst children on healthy choices, and the more constrained financial resources of children all were suggested as contributors to making children a particularly vulnerable population to highly processed and calorie-dense foods available in bodegas.

Positive. Two bodega owners mentioned they wanted to carry more items like fruits and vegetables, although others discussed that they already carry a wide variety of products, comparing themselves with supermarkets. To improve the community food environment, one bodega owner suggested that a change in the bodega food environment would only be possible if all bodegas worked together as opposed to working in silos, and if they were supported by both government and large food corporations in stocking healthier options at affordable prices. In parallel, some bodega customers



Figure 4. Produce section from a bodega in the South Bronx participating in this qualitative study on the perception of online grocery shopping from small food retailers.

recognized that there has been a change in the quality of foods offered in the stores, with healthier options:

So, some bodegas sell something nutritious, like smoothies, salads. You can make your own salad at the deli, which helps you more. (R2020, Female, 35–39, African American, English, Customer)

Perceptions of the Acceptability of Online Grocery Shopping from Small Food Retailers in an Urban Community with Low Income

Five primary themes and 6 associated subthemes were identified in relation to the acceptability of an online grocery shopping service that delivers bodega products. Illustrative interview quotations are included in Table 2 to depict interpreted themes. The main themes included (1) online grocery shopping from bodegas as a community resource; (2) the proximity of bodegas to customers' homes; (3) "us" vs "them"; (4) recommendations for online grocery shopping from bodegas, and (5) consequences of online grocery shopping from bodegas.

Online Grocery Shopping from Bodegas as a Community Resource

All bodega owners interviewed shared that they take orders from the phone and deliver them to customers who live

within walking distance, usually up to 3 blocks away. Additionally, some currently partner with a large third-party food delivery app (UberEats) to deliver deli sandwiches and prepared meals. The partnership with the MyBodegaOnline app started amidst the pandemic, and most bodega owners expressed that they were excited about the concept of the service, mainly because of it being an app exclusively for bodegas, with the ability to streamline the process of taking delivery orders, which previously took place over the phone.

Most bodega customers interviewed had previously ordered groceries from supermarkets, but ordering foods and beverages from bodegas through an app was unheard of. However, when presented with the idea of the MyBodegaOnline app, most participants interviewed appeared excited and stated that the service would be beneficial either to them or to someone they knew.

I think it [a bodega app] would benefit my community. [...] I do know people in my neighborhood who have multiple children, or they can't go out as often. Or if they're elderly. I could definitely see that being a resource for them. And then, also having it delivered—not having to go in, and drag it home, you know? And then, you're supporting your local business, which is a big thing in my community as well. (R2018, female, 25–29, African American, English, Customer)

The Proximity of Bodegas to Customers' Homes

When considering delivery, owners view the stores' physical proximity to customers' homes as an asset, because groceries could be delivered relatively quickly and at a low cost by a staff member on foot. For customers, however, proximity to the bodega makes online grocery ordering less compelling. Despite being generally excited about the idea of an online grocery service from bodegas, most of the customers thought it would be easier and faster to simply go to the store and purchase the items themselves.

I never used it [online grocery shopping] before. Because everything is right here, around me. So, I don't see no sense in doing it. (R2001, male, 40–44, African American, English, Customer)

'Us' vs 'Them'

Bodega owners who partnered with the MyBodegaOnline app believed the service was not successful because it was tested in the wrong community. Likewise, bodega customers also shared the owners' sentiment that online grocery shopping from bodegas would not work in their community because of social norms and the low digital literacy in this particular setting.

Social Norms. Some bodega owners cited their motivation for offering online grocery shopping services in their store as expanding their business and gaining a new clientele, mostly consisting of younger customers. Some bodega customers displayed a sense of pride in their ability to navigate a complex food environment without help. This pride was associated with unwillingness to order from bodegas online. Mistrust in having others select their groceries or in services that are not from the community was another salient

subtheme that shaped customers' social norms around online grocery shopping:

So, I think for them [White people moving into the community], it would be definitely convenient. And, of course, that means more business in the area because of the people that are ethnically coming into this area. [...] for them, [ordering groceries online is] reasonable. But I feel like for us, [...] a lot of people in this area [...] have a lot of trust issues. I have immigrant parents, so they're just like, "I don't want to be considered lazy. I don't want an app to do the work for me. I can get up, I can do it." (R2012, Female, 18–24, other race or ethnicity, English, Customer)

Digital Literacy. A barrier perceived by both owners and customers was the low digital literacy and the digital divide in the community, in which they perceived community members to not have access to a computer or not know how to use an app to order foods.

People will not use their phones to do things of that nature [online grocery shopping] in some of these neighborhoods. (R2011, English, Customer, no demographic data reported)

Recommendations for Bodega Online Grocery Shopping from Bodegas

Cost. Bodega owners recognized the importance of having a service that is of low cost to their customers. One owner mentioned that while, officially, a minimum order policy of \$10 for delivery exists, they do not currently enforce this when taking phone orders. To customers, one of the major deterrents to online grocery shopping from supermarkets was the delivery and service fees. Customers voiced that fees associated with online grocery shopping from bodegas needed to be minimal to attract shoppers.

Well, having no fees would be amazing because the fees these days are very expensive, so it does scare a lot of people. It does throw people off, if they see their total go up by \$15. (R2025, female, 18–24, other race or ethnicity, English, Customer)

App Design. The bodega owners who partnered with the MyBodegaOnline app offered suggestions for the design of the app, including the ability for them to change the menu of their hot foods daily, a "beep" sound to notify them on the receipt of new orders, and a phone or tablet specifically dedicated to managing the online grocery service. Another owner shared the importance of the app being simple for customers. One customer recommended having real photos of the products in the store that are regularly updated in the app, instead of stock photos. Another customer recommended being able to track the delivery on the app.

SNAP Online. Bodega owners also highlighted technology barriers that they face when taking phone orders in terms of their inability to take SNAP benefits at delivery. Currently, phone orders can only be paid for with cash at delivery.

Owners recognized that the ability to accept government benefits such as SNAP as payment for phone and online orders would benefit much of their clientele. Owners believed this service could be offered if they had the ability to bring a mobile point-of-purchase system that accepts government benefits at delivery. Similarly, many bodega customers also emphasized the importance of an online grocery shopping service enabling multiple types of payment options, particularly cash and SNAP benefits.

Outreach. Bodega owners also recommended stronger outreach from trusted sources to improve the uptake of online grocery shopping from bodegas and address the issue of trust in a new service amongst community members. Figure 5 shows an example of outreach of the online grocery shopping app for bodegas in the study community. Customers concurred with owners on the importance of having a large and targeted outreach effort, including posting flyers around the community and online ads, to increase awareness of such a service in the community.

Consequences of Online Grocery Shopping from Bodegas

From the bodega owners' perspective, having online grocery shopping in their stores would benefit themselves by streamlining the ordering system and would also benefit their customers by offering increased convenience and by allowing them to pay online. Bodega customers had mixed feelings about the effects of online grocery shopping from bodegas. Some bodega customers suggested that the new service could increase employment opportunities in the neighborhood through delivery. Although some bodega customers suggested that the new service could increase employment opportunities in the neighborhood through delivery, one customer raised the concern that bodegas would lose profit if they offered a delivery service at no cost, as was the case with the pilot of MyBodegaOnline. Another



Figure 5. Online Bodega Ordering App advertised in a bodega located in the South Bronx participating in this qualitative study on the perception of online grocery shopping from small food retailers.

customer evoked the possibility of this service decreasing the social and community aspects of bodegas.

DISCUSSION

This qualitative study, conducted in a dense urban community with low income, demonstrated that bodega owners and customers had a shared sense of the bodega as a cultural and food safety net asset to the community, although they diverged in their opinions regarding the affordability and healthful nature of the food offered in these stores. Based on the evidentiary warrant and analysis of the data, the key assertions of this study are that the proximity of the bodega stores to customers' homes, limited digital literacy among certain community members, and the social norm of pride in not purchasing groceries online tempered enthusiasm for the potential of online grocery shopping from bodegas in an urban setting of low income. However, both bodega owners and customers acknowledged the service could be a community resource and recognized the potential positive consequences of its use. Both groups provided important recommendations for policies and programs to increase the acceptability of online grocery shopping from bodegas, such as lowering the cost of the service, having a user-friendly design, accepting SNAP as an online payment method, and strengthening outreach for program awareness. Based on these study findings, the authors further hypothesize that a potential unintended consequence of online grocery shopping from bodegas could be reduced opportunities for informal lines of credit that occur as a result of relationship building during in-store visits. The role of bodegas as a food safety net was one of the ways in which small stores were perceived as an important asset to their communities, and this could be undermined in the online food environment.

To some customers, the close proximity of bodegas to consumers' residences made an online bodega service seem "unreasonable," and its use was viewed as "lazy," with customers showing pride in self-sufficiency, demonstrating they can purchase groceries themselves. Nieves et al⁵⁴ also found that pride in "making it work" in terms of accessing foods was reported among individuals who are food insecure. The current study also adds that many individuals experience pride in food procurement as a part of their cultural identity, which shapes the ways that they navigate the food system. Despite the increase in the use of online grocery services among individuals with low income, especially in the context of the SNAP online purchase pilot, which allows SNAP benefits to be used at authorized online retailers,³⁰ it may be important to acknowledge that many cultural groups perceive online grocery shopping as "lazy" when shopping at nearby stores, making this iteration of the service less valued.

Lack of trust in the online retailer system was discussed by bodega customers as another factor that shaped social norms of grocery shopping in the community. Previous studies have reported mistrust in online grocery shopping as a barrier to the uptake of the service, both before⁵⁵ and during the pandemic and SNAP online purchase pilot rollout.³² Based on the Theory of Planned Behavior, improving one's sense of control over the online grocery shopping process,⁵⁶ especially regarding product selection, could address customers' mistrust in the service and might increase service uptake.

Important disparities in internet access exist in terms of race or ethnicity (Native American, Black, and Hispanic people having the lowest access),⁵⁷ and in terms of schooling and urbanicity,⁵⁸ especially with respect to older adults.⁵⁹ The digital divide may help explain the low uptake of online grocery services among populations with low income and older adults,^{60,61} and this study demonstrated that digital literacy and norms around how to use the technology need to be concurrently addressed.

At the retailer level, complications related to the required payment technology for taking online orders were the most prominent barriers to an online grocery shopping service, according to both owners and consumers. As technology becomes more prominent in government benefits that serve individuals with low income, small food businesses need to be included in the conversation so as to not leave these stores and their consumers behind. The specific technological challenges that small retailers face must be addressed concurrently with additional barriers experienced by both customers and bodega owners to online grocery shopping. For example, the Expanding SNAP Options Act of 2021⁶² provided funding for the SNAP EBT Modernization Technical Assistance Center for an online redemption portal to increase the capacity for small retailers to offer SNAP online and by providing technical assistance.⁶³ Although this is a step forward toward equitable food access, as shown in the current study, additional barriers remain, such as proximity—how far would a small retailer staff be willing to travel to deliver grocery orders to their clients? Could this be addressed with a coordinated cross-bodega delivery service? Or if small-business owners were relieved of the responsibilities of offering delivery, could a third-party delivery service offer a wider radius for delivery?

It is also uncertain whether delivery would be free for future online grocery shopping from small food retailers. Cost of delivery has been one of the major barriers to customers accessing online grocery services,^{31,32} and possibly most bodega customers perceived MyBodegaOnline to be a good community resource only because delivery was free through the app.

Along with enhancing payment technology, there is a need to improve service outreach. In this study, lack of awareness of an online grocery shopping service from bodegas was another barrier to service uptake, corroborating findings from other studies that evaluate major programs to improve food access in communities with low income, as seen in SNAP incentive programs.^{64,65} Both owners and customers suggested various means of outreach to improve community awareness of the service, including flyers and online advertisements. Thus, additional funding for the SNAP EBT Modernization Technical Assistance Center should be included in the next farm bill to ensure wide community outreach and sufficient funds to cover costs associated with delivery for small retailers.

Bodega owners and customers shared the perspective that bodegas are an asset to the community because they provide cultural foods and a food safety net. However, when reflecting on online grocery shopping from bodegas, customers speculated that some potential unintended consequences of online grocery shopping might lead to reduced opportunities for physical activity and fewer social interactions. The authors further hypothesize that some of the economic benefits that

bodegas provide to customers, such as informal lines of credit or flexible pricing that occur as a consequence of relationship building between customers and owners during in-store visits, might be less possible with online grocery shopping. Future online grocery programs in small food retailers should evaluate these unintended consequences to community food access and health.

Despite the extensive research on small retailers, few studies highlight the role of informal access to lines of credit offered by local small food retailers to community members in addressing socioeconomic issues such as food insecurity via the provision of a food and financial safety net. A previous qualitative study among residents of low-income from urban Detroit highlighted a similar phenomenon in which regular customers with close ties to small food store owners and employees were able to access interest-free informal credit as a way of coping with food insecurity.⁶⁶ Access to in-store credit also has been documented in small food stores in Latin America, where interpersonal relations and trust between customers and owners were key in accessing this economic strategy.⁶⁷ A recent multiple case analysis of independently owned food retailers across seven communities in the United States highlighted nontraditional business strategies to pursue both financial and social responsibility, such as lowering profit margins significantly (<30%), collaborating with a nonprofit organization, or co-op models with the common goal of offering healthy foods at prices their communities could afford.⁶⁸

Discordance between bodega customers and owners was seen in relation to the store's contribution to the health of their community, which has been documented in previous qualitative work in terms of supply and demand for healthy foods.⁶⁹ Although store owners viewed themselves as providers of social and financial support to the community, the healthiness of the items sold in their stores was not related to community health. They viewed their contribution as the provision of food.⁷⁰ Although previous research exploring perspectives of urban small food store owners reported that owners expressed concerns about the health of their community members,^{23,71,72} most of the previous work included a sample of owners who were already part of a healthy store program, which is biased toward a higher-than-average interest and motivation to address community health. A previous mixed-methods exploration of store owners' perception of the food environment corroborated findings from this study, as owners perceived they have little influence over the foods available in their stores, for which they rely on distributors' and consumers' decisions.⁷³ Even if owners had decision-making power, they lacked consensus on the definition of "healthy food,"⁷³ illustrating that owners' concern about consumers' health does not necessarily translate to consistent efforts to promote positive health outcomes. When taken together, there is a need for interventions and programs, such as the Healthy Corner Store Initiative models, to simultaneously work at multiple levels of the food system to promote community health.⁷⁴ Future small food retailer programs must emphasize the benefits of stocking healthy foods beyond health outcomes, and build on themes that are more salient to a broader group of owners' interests, such as community engagement, to best understand needs and preferences,⁷⁵ internal store infrastructure, and dual prioritization of community and profit.^{68,76}

This study has several strengths, such as investigator triangulation, accomplished by having multiple researchers collect and interpret data independently before meeting to debrief, discuss, and come to a consensus on coding,⁷⁷ and the inclusion of the perspectives of community members and retailer staff. Furthermore, the use of emergent design, reflected in the iterative nature of the interview guides and the member check interview guide that allowed for community interpretation of the findings, enhanced the credibility of the findings.⁷⁸ Interviews conducted in both English and Spanish among a community that is typically excluded from research (predominately Hispanic and Black neighborhoods) is another strength.

This study also has several limitations that must be acknowledged. Participants were primarily bodega customers who owned a smartphone; therefore, important perspectives about the food environment may have been missed from other community members who do not frequent bodegas often or do not have access to technology. However, it was the scope of the paper to explore the role of online grocery shopping from small food retailers in communities of low-income; therefore, the focus on recruiting bodega customers and owners was relevant. Furthermore, participants self-selected to participate in the study, and there were differences in demographics that may have biased interview participation toward those who are older and more educated. Despite efforts to address literacy and language barriers by assisting interested individuals in filling out the online screener, younger adults with lower education were harder to follow up with to schedule an interview. It must also be acknowledged that data were collected in only one neighborhood with low income of NYC. Future studies should explore whether small stores located in other parts of the city (or in other urban settings), as well as in rural settings, might have different constraints and perceptions, especially in rural communities with limited access to supermarkets.⁷⁹⁻⁸¹

CONCLUSIONS

Online grocery shopping from small food retailers is perceived to be a potential community resource, although some barriers need to be addressed in this urban community with low income before the service is implemented. Barriers to be addressed include social norms related to online grocery services, especially when considering the close proximity of bodegas to residences and the community pride in wanting to do the “work” themselves, digital literacy, trust in the services, and program awareness. Bodega owners and customers recommended that a bodega online grocery service allow multiple payment types, including SNAP online, keep fees low, and implement a broad outreach effort. This study contributed to an early additive stage of hypothesis generation on the acceptability of online grocery shopping from small food retailers in underserved communities to inform theory construction.

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A. C. B. T. designed the study, and B. C. W. and N. B. B. made substantial contributions to the conception of the work. A. C. B. T., N. B. B., S. L., and L. A. T. collected the qualitative data. A. C. B. T., N. B. B., and Z. N. R. analyzed the qualitative data. A. C. B. T. wrote the first draft with contributions from N. B. B., Z. N. R., B. E., S. L., L. A. T., and B. C. W. All authors reviewed and commented on subsequent drafts of the manuscript. All authors have reviewed and approved the final version for submission.