



Strategies for Increasing Participation of Diverse Consumers in a Community Seafood Program

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Abstract

Alternative food networks, such as farmers' markets and community-supported agricultural and fishery programs, often struggle to reach beyond a consumer base that is predominantly white and affluent. This case study explores seven inclusion strategies deployed by a community-supported fishery program (Fishadelphia, in Philadelphia, PA, USA) including discounting prices, accepting payment in multiple forms and schedules, offering a range of product types, communicating and recruiting through a variety of media (especially in person), and choosing local institutions and people of color (POC) as pickup location hosts. Our analysis indicated that all of these strategies were associated with increased participation of customers of color and/or customers without a college degree. For Asian customers, accepting cash, offering whole fish, recruiting in-person, and POC-hosted pickup locations were key factors. For Black customers, discounted price, accepting cash, offering fillets, and communicating through means other than email were most important. Discounted price and communicating through means other than email were most important for customers without a college degree. Payment method, payment schedule and communication method were highly correlated with other strategies; we suggest that these strategies work in synergy to make the program attractive and feasible to these customers. We consider how Fishadelphia's inclusion efforts have benefitted from both tactical approaches (i.e., programmatic features) and a structural approaches (i.e., the people and places represented within the project), and suggest that elements of both tactical and structural inclusion can be applied in other contexts. This work is crucial for increasing food access, and underscores the importance of relationships in recruiting diverse customers.

Keywords Alternative food network (AFN) · Community-supported fishery (CSF) · Diversity · Inclusion · Equity · Diversity, Equity, Inclusion · Community-supported agriculture (CSA)

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Introduction

Alternative food networks and communities of color

The alternative food movement has expanded dramatically in the last few decades, in part as a response to corporate consolidation of food systems (Feenstra, 1997; Grauerholz & Owens, 2015). One manifestation of this growth is the proliferation of alternative food networks (AFNs): systems outside conventional supply networks for distributing food from producer to consumer, such as farmers' markets, and community-supported agriculture (CSA) and fishery (CSF) programs (Bolton et al., 2016; Cone & Kakaliouras, 1995). The goals of AFNs vary widely by program, and include generating broad social benefits as well as accruing specific benefits for producers and consumers. For example, many such programs aim to increase community cohesion (Brown & Miller, 2008; Hinrichs, 2000) as well as to reduce the environmental impact of food production and distribution (Grauerholz & Owens, 2015). For producers, AFNs may purport to decrease risk while increasing revenue, stability, and appreciation, especially for small-scale producers. On the consumer side, AFNs may aim to provide access to higher quality food, as well as education about food production.

Despite their prevalence, many AFNs, especially in North America, have struggled to expand their reach beyond a consumer audience that is predominantly affluent and white, especially when the project organizers are white. While some operations are not interested in expanding their marketing beyond this demographic group (Hodgins & Fraser, 2018), others explicitly express interest in getting food to low-income households and households of color but have had trouble doing so successfully or at scale (Hinrichs and Kremer 2002; Kato, 2013). One obvious consequence of this is that consumer-oriented benefits, including access to fresh, high quality food, are only available to predominantly affluent and white communities, and not to low-income and communities of color. The failure of many AFNs to serve consumers of color is also detrimental to the AFNs themselves: these underserved consumers offer huge potential market value, especially in the case of seafood. African-American consumers spend 70%, Latino consumers 122%, and Asian-American consumers 147% more money on seafood than white consumers (NEJAC, 2002; Nielsen 2013, 2015a, 2015b). If this buying power were better integrated into the alternative food movement, the movement as a whole would stand to benefit.

One response to this challenge has been the development of AFNs specifically by and for communities of color. A foundational example is civil rights activist Fannie Lou Hamer's Freedom Farm Cooperative (founded 1967): an alternative food (and economic) system created by and for poor Black residents of Sunflower County, Mississippi (White, 2018). Many other food programs led by people of color (POC), aimed at both supporting POC producers and serving POC consumers, have emerged in the US since then, though they remain a small portion of AFNs nationally. Other well-known examples include *Soul Fire Farm* (Penniman, 2018), the *Detroit Black Community Food Security Network* (White, 2011),

and the *Asian Pacific Islander Forward Movement Food Roots Program*—each of which deploy intentional strategies to reach their target communities, described below.

Barriers to Participation in Alternative Food Networks

What do we know about the barriers to participation of low-income people and POC in AFNs, and strategies that have successfully been deployed to address them? Price is the most well-cited barrier to participation by underrepresented groups in AFNs. A number of studies suggest that price is the most important variable influencing where low-income people purchase groceries, and what they buy (Alkon et al., 2013; Kato, 2013). Food distributed through AFNs is often sold at prices that are too high for households on limited incomes (Freedman et al., 2016; Lennon, 2018). In addition, many CSA or CSF programs require payment in advance, a system which may be unfamiliar to some, and prohibitive for low-income customers. Payment method, as well as total cost, may also be a factor: low-income, Black, Latinx, and/or undocumented households in the US are disproportionately likely to be disengaged with traditional banking and credit systems, and less likely to pay in advance by credit card (FDIC, 2017; Rhine & Greene, 2006). Common strategies to ameliorate these problems include accepting food subsidies (such as SNAP), taking payments on a weekly basis rather than in advance, offering income-based sliding scale pricing or work-exchange discounts, and developing food recovery or gleaning programs (Andreatta et al., 2008; DeFosset et al., 2018; Galt et al., 2017; Kato & McKinney, 2015; Koehn et al., 2020; Lennon, 2018; White, 2011).

The variety of products available at AFNs may also be a deterrent for some customers. AFNs often offer a somewhat limited and seasonal variety of product, determined by local conditions, and this product selection may not always be a good match for the desires of low-income consumers and consumers of color (Hodgins & Fraser, 2018; Kato, 2013; Kato & McKinney, 2015; Lennon, 2018).

In addition to price and product availability, there can be cultural barriers to AFN participation. It is well established that people socialize and build networks with others who are similar to themselves (DiPrete et al., 2011). Studies have documented a dominant “white” culture at some farmers’ markets in the US (Guthman, 2008; Slocum, 2007). This culture can be alienating for some consumers of color (Conner et al., 2010), although may be less of a deterrent in other cases (Kato & McKinney, 2015). Demographics of AFN staff are also relevant. Multiple studies have documented key demographic and cultural differences between food program organizers and participants, resulting in inaccurate assumptions on the part of the organizers (Flora, 2011; Guthman, 2008). For example, middle/high-income AFN organizers often assume that low-income individuals do not have the knowledge or experience to handle unprocessed food (Guthman et al., 2006; Hodgins & Fraser, 2018). This view is contradicted by other work indicating that low-income consumers and consumers of color often demonstrate both interest and expertise in shopping for and cooking fresh food (Alkon et al., 2013; Kato & McKinney, 2015). Additionally, research indicates that customer preference varies by demographics; for example,

Asian customers are particularly interested in whole fish rather than fillets (Allen et al., 1996). Cultural divides also manifest in communication: the digital divide remains wide in the US, with Black, Latinx, and low-income individuals much less likely to have internet access, so effective outreach to these communities may need to extend beyond the internet (Vogels, 2021).

Geography also matters. Residential and geographic segregation by race, education, and economic status are well established in the US (Charles, 2003). AFN locations, such as farmers' markets and CSA pickup locations, may be located in places that do not facilitate access for low-income customers or customers of color. Many programs have placed farmers' markets or CSA pickups in low-income neighborhoods in an explicit attempt to address this barrier (Andreatta et al., 2008; Guthman et al., 2006; Kato, 2013; White, 2011). Others have built delivery programs in recognition of the fact that not all consumers have access to cars (Lennon, 2018). Just being in the right neighborhood may not be enough, however; specific placement can be crucial. For example, Kato (2013) suggested that many Black neighbors did not patronize a nearby farmer's market because it was located next to a playground that had been historically closed to Black residents; unfamiliarity with the history of a region can hinder success of a program.

Study Goal and Research Question

While barriers to participation in AFNs by underrepresented groups have been discussed at length, and some mitigation strategies have been identified (Lennon, 2018), few studies have systematically assessed whether, how, and why these strategies work. This study's goal is to quantitatively evaluate one community food program's strategies for increasing participation of consumers who are of color and/or with less formal education. Specifically, we ask whether there is a relationship between customer demographics and payment (including price, payment schedule, and payment method), product type, communication medium, recruitment strategy, and program geography.

Because income is correlated with both race and educational level in the US (Bhutta et al., 2020), we analyze all seven strategies with respect to race and educational level. We then explore how these strategies and the structure of the program itself have played crucial roles in the success of its inclusion efforts. We expect that this analysis will be of interest to a range of AFNs, including those who want to increase their demographic reach as well as those who are already embedded in their target communities.

Case Study

Fishadelphia (www.fishadelphia.com) is a community seafood program founded in 2017 and based in Philadelphia, PA, USA. Fishadelphia's mission is to connect regional seafood harvesters and processors with culturally and economically diverse seafood eaters. Fishadelphia employs a hybrid CSF model whereby many,

but not all, customers pay a sum up front in exchange for receiving regular shares of seafood over a season. To date, Fishadelphia is the only CSF in North America with an explicit goal of targeting socio-economically diverse customers as well as the only one led by POC.

Fishadelphia runs after-school programming for middle and high school students at two partner schools, in its target communities, and much of the day-to-day operations of the program (e.g., communications, planning, budgeting) are supported by those students. One of the partner schools is racially and ethnically diverse (45% Black, 27% white, 22% Asian, 6% Latinx, with 87% eligible for free lunch); the second has a student body that is over 95% Black and/or eligible for free lunch. Fishadelphia acts as a connector between predominantly white-owned, New Jersey-based seafood suppliers and racially and socio-economically diverse communities within Philadelphia. More details about Fishadelphia can be found in Cumming et al. (2020) and Carlson et al. (2021).

Hypotheses This paper explores strategies designed to promote inclusion among the customer base for Fishadelphia, asking whether each strategy is related to increased participation among underrepresented groups. We list below seven inclusion factors, with specific inclusion strategies for each, and the related hypotheses tested in this analysis. We analyzed all seven strategies with respect to race and educational level.

1. **Payment rate.** Fishadelphia offered a differentiated pricing system for the same amount of fish: “market rate” (\$22/week), and “discounted rate” (\$12/week). Customers were eligible to pay discounted rate if they (a) sent a student to a partner school, (b) were a member of a partner church, (c) were eligible for public assistance (e.g., SNAP or Medicaid), or (d) were referred by another discounted-rate customer.

Hypothesis 1: Participants using the discounted rate will be more likely to be POC or without a college degree.

2. **Payment schedule.** Some Fishadelphia customers pre-paid for a season ahead of time (subscribed); others elected to purchase seafood on a weekly basis based on what was available that week (week-by-week).

Hypothesis 2: Participants using a week-to-week payment schedule will be more likely to be POC or without a college degree.

3. **Payment method.** Fishadelphia customers paid for seafood in a variety of ways, including credit card through the website, mobile payments (including Venmo, PayPal or CashApp), and/or cash.

Hypothesis 3: Participants using cash will be more likely to be POC or without a college degree.

4. **Fish preparation.** Fishadelphia offered the option to purchase either whole fish or fillets (at the same price).

Hypothesis 4: Participants purchasing whole fish will be more likely to be Asian or without a college degree.

5. **Primary communication method.** Fishadelphia customers communicated with the program in a variety of ways, including by email, text/phone, WeChat (a Chinese social media platform), or in-person.

Hypothesis 5: Participants using non-email communication methods will be more likely to be POC or without a college degree..

6. **Recruitment method.** Some customers got involved in the project through relationships, such as being recruited by *another customer, staff, or students*. Others were recruited at *program sites* (two partner schools, three markets, and a church), while others heard about the program through the *internet* (using search engines, local seafood websites such as LocalCatch.org, social media, email lists), and the *press*.

Hypothesis 6: Participants recruited at a program site or in-person will be more likely to be POC or without a college degree.

7. **Pickup location:** Over the course of this study, Fishadelphia customers picked up seafood at a variety of locations, including program schools and fishstands. These sites were chosen intentionally for location in and connections with communities of color. Students at the partner schools are majority POC and qualify for free lunch (see above). Two of the markets were hosted by Southeast Asian community organizations and one by a Black farm. In addition to these program sites, there were 24 “porch pickup locations” hosted by customers.

Hypothesis 7: Participants using the program site or POC-hosted pickup will be more likely to be POC or without a college degree.

These strategies address challenges identified in the literature above (i.e., 1–4 address price and product, 5–6 address culture and representation, and 7 addresses geography).

Methods

Data Sources

Two sources of data were used for this analysis: Fishadelphia’s program operations data, and surveys collected from customers, staff, and students. The Fishadelphia

program operations data set included data on all individuals who purchased seafood from the program between Jan 2018 and Jul 2021 ($n=861$). The survey dataset included surveys completed by customers buying fish from the program ($n=174$, SI 1 and SI 2) and students participating in the after-school program ($n=38$, SI 3 and SI 4) between Jan 2018 and Jun 2021. All customers and students were invited to complete pre-surveys when they started with the program and post-surveys at the end of each season. Surveys were offered both in-person (on paper) and online; participants either completed the survey themselves (in English) or a program worker read them the questions (in English, Mandarin Chinese, Burmese, Karen, or Tedim Chin) and marked down their responses. Pre- and post-program surveys completed by the same individual were linked using a unique identifier.

Where applicable, we also compared demographics of the customers (*referrals*) with those of the person who referred them (*referrer*). Information on customer referrers and referrals were compiled from the program data (if a customer indicated they had been referred to the program by another individual by name), the survey data (if a customer indicated they knew someone in the program), and internal staff communication about known referrers and referees.

When interpreting and contextualizing analyses, we also drew on our firsthand knowledge of Fishadelphia's operations and operational decision-making, as well as the identities of and relationships among project participants.

Inclusion Strategies

We analyzed seven inclusion strategies as described above. Data for **payment rate** (regular or discounted), **payment schedule** (pre-paid seasonal or week-by-week), **payment method** (credit card, cash, or mobile payments—Venmo, Paypal, or CashApp), **fish preparation** (whole fish or fillets), **primary communication method** (email, text, WeChat, in-person), and **pickup location** (POC-hosted/program site or white-hosted) came from the program dataset. Program sites were categorized as POC-hosted, and race of customer-hosted pickup sites came from the survey dataset. Customers who met multiple criteria were assigned the criterion that applied most often (e.g., if someone paid mostly by credit card but occasionally by Venmo, they were categorized under credit card).

The outcome variable of race was captured in multiple ways. For the most part, we used responses to a check-all-that-apply question about race on surveys where available ($n=220$). In some cases ($n=44$), we used language as a proxy, described below. *Black* included respondents who indicated Black or African-American, *Latinx* included participants who indicated Hispanic or Latino. *Other race* included respondents who indicated Native American/Alaska Native, Hawaiian/Pacific Islander, or indicated “two or more races” without checking any other race categories. *White* included those who indicated white. The *Asian* category included respondents who indicated Asian on the survey, as well as those who communicated with Fishadelphia primarily in Chinese or a language spoken in Myanmar (Burmese, Karen, Tedim Chin), or those who indicated on the survey that they speak an Asian language at home. For some analyses, we used an aggregated “people of

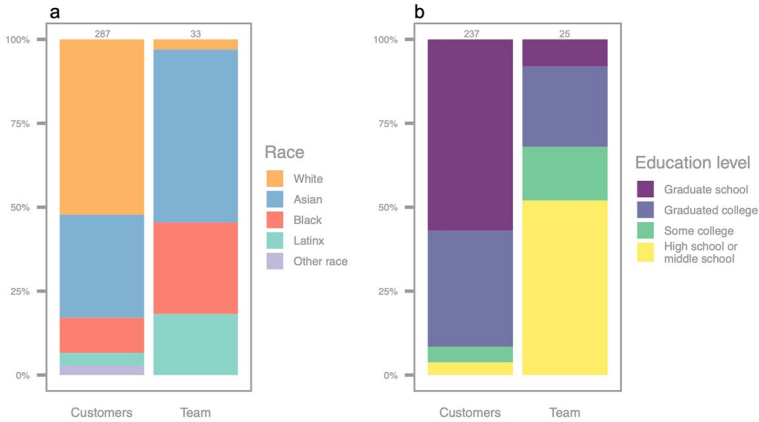


Fig. 1 Demographics of Fishadelphia customers and team members (staff and students), by percent: race (a), and education level (b)

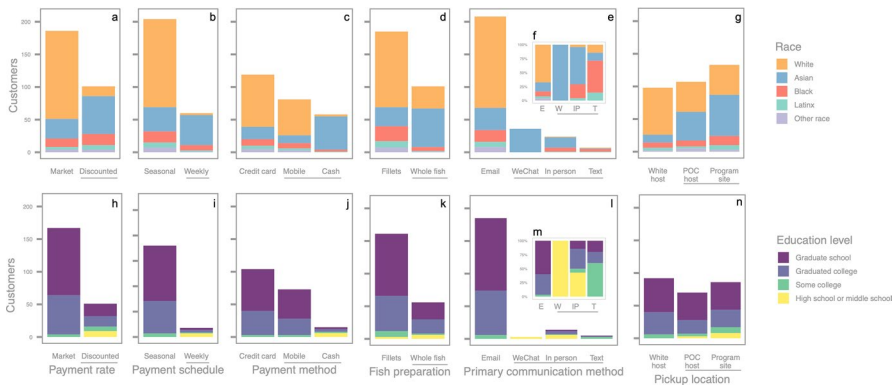


Fig. 2 Inclusion strategies intersected with race (a-g) and education level (h-n) of Fishadelphia customers, including: customers who paid market rate (\$22/lb) vs. a discounted rate (\$12/lb) (a and h); customers who subscribed and pre-paid for a season vs. paid weekly (b and i); customers who paid (c and j)—“mobile payment” included Venmo, PayPal, and CashApp; customers who purchased primarily whole fish vs. fillets (d and k); primary communication medium which customers used with Fishadelphia (e and l), with percentages in insets (f and m)—“in-person” included transactions at program sites, and through staff and students; where customers primarily picked up their seafood (g and n)—“program site” includes partner schools and outdoor markets. Gray lines indicate intentional inclusion strategies

color” (POC) variable, which included Black, Asian, Latinx, and other race, in contrast to individuals who indicated white.

A number of individuals (n=15) specified more than one race. In Figs. 1, 2 and 3, we included those individuals in every category they indicated, because we reasoned that these multiple identities could indicate connections to multiple communities for inclusion and outreach purposes. For the logistic model (described below),

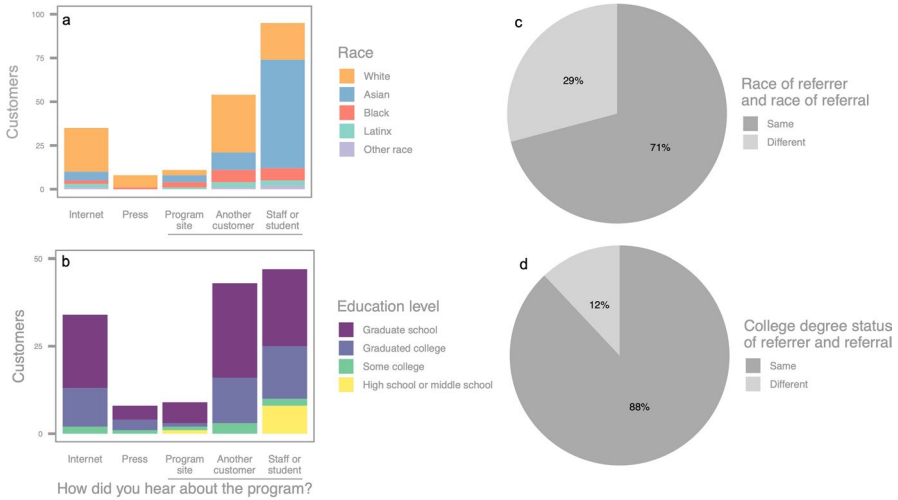


Fig. 3 How Fishadelphia customers heard about the program by race (a) and education level (b). “Internet” includes using search engines or other internet-based local seafood web sites, social media, and/or an email list (such as a parent or garden group). “Program site” includes partner schools and outdoor markets. Gray lines indicate intentional inclusion strategies. Matching demographics between customers who were referred by other customers (referrals), and those who referred them (referrers) by race (a), and whether the customer had a college degree (b)

individuals were included in the Black, Asian, or POC categories if they indicated one of those identities.

For **education level**, we used responses to a survey question about the highest level attained by themselves (for customers) or for their parents (for students). Respondents selected one of the following options: middle/high school, some college, graduated from college, and graduate school.

Analysis

In addition to reporting the percentage of respondents by inclusion strategy category, we fit a series of binomial logistic regressions to investigate the relationship between the inclusion strategies and demographics.

$$\text{Outcome variable} \sim \text{Payment rate} + \text{Payment schedule} + \text{Payment method} + \text{Fish preparation} + \text{Communication method} + \text{Recruitment method} + \text{Pickup location}$$

We included the seven inclusion strategy variables explained above in four models, one with each of the following outcome variables:

- a. POC
- b. Asian

- c. Black
- d. No college degree

We evaluated the model for each possible combination of the seven inclusion strategy variables. For each combination, we calculated the Akaike Information Criterion (AIC) and the Deviance R^2 ($1 - (\text{Residual Deviance}^2 / \text{Null Deviance}^2)$) (Burnham & Anderson, 2002), and selected a final model for each outcome variable with the lowest AIC. We then evaluated each final model for evidence of multicollinearity, using variance inflation factor (vif) and correlation tables. Analyses were conducted in R v3.6.2 (R Core Team, 2019).

Results

Sample Sizes

Of the 861 individuals in the Fishadelphia program dataset, just over 25% ($n=220$) provided data on race, and nearly all of those ($n=218$) provided data on educational level through completed surveys (Table 1). There were 44 additional customers (5%) who did not provide data on race but spoke an Asian language (see details below); we grouped those customers as “Asian or speaking an Asian language” and included them in the race data. Asian customers are therefore better represented in the race data than the education data. All nine staff, as well as 9 of 22 students, purchased seafood and were thus included as customers.

We expected to have fewer available data on customers using inclusion options than those who were not. We found that rates of survey completion were similar among customers participating in inclusion options and those who were not (22% vs 31% respectively) (Table 1). The one exception was communication method, where only 8% of customers using WeChat completed surveys (we hypothesize primarily due to language barriers).

Race and Education Level

Reported race and language data (Fig. 1a) showed customers were about half white (52%), about a third Asian (31%), a tenth Black (11%) with other categories as smaller minorities. Twenty-one customers who indicated multiple race categories were included in all categories as discussed above. The vast majority of customers either graduated from college (35%) or attended graduate school (57%). Much smaller percentages had attended some college (5%), or attended only middle or high school (4%). All of the customers who had a high school education or less were people of color (Fig. 1b).

Fishadelphia staff and students were predominantly POC (Fig. 1a); with about half Asian, a third Black, a fifth Latinx, and one white student. About half of Fishadelphia staff and students (their parents by proxy, as described previously) did not attend any college. This trend was largely driven by students’ parents, whereas all of

Table 1 Seven inclusion strategies, with inclusion and standard options, sample sizes, and data availability and sample sizes across categories

	Inclusion options		Standard options		Race data		Education data	
			Customers using inclusion option(s) (%)	Customers using standard option(s) (%)	Total customers	Customers using inclusion option(s) (%)	Customers using standard option(s) (%)	Total customers
Price	Discounted rate	Regular rate	41	27	264	22	27	218
Payment schedule	Weekly	Subscribed in advance	77	26	237	24	28	198
Payment method	Cash	Credit card, Mobile payment	78	29	242	20	25	192
Fish preparation	Whole fish	Filletts	49	28	263	26	29	217
Primary communication	In-person, text, or WeChat	Email	49	27	253	16	27	207
Recruitment method	Program sites, staff / student / customer	Internet, press	36	31	185	25	31	141
Pickup location	POC-hosted	White-hosted	37	24	231	25	24	186

the adult staff had attended some college. About a quarter graduated college, while smaller fractions attended some college or completed graduate school (Fig. 1b).

Inclusion Strategies

Payment Rate

Overall, about three-quarters of customers paid market rate (73%) and about a quarter paid the discounted rate (27%). Of customers paying the discounted rate, 85% were POC, and the majority of those were Asian (Fig. 2a). All customers with a high school education or less ($n=9$) paid the discounted rate, but more than half paying the discounted rate had a college degree or some graduate school (69%, $n=35$). About 14% of the customers paying the discounted rate indicated they had attended only some college, in contrast to 2% of those paying market rate (although the absolute numbers were small in both cases: $n=7$ at the discounted rate and $n=4$ at market rate) (Fig. 2h).

Payment schedule

Most customers (90%) subscribed and pre-paid for a full season of seafood deliveries, while 10% ordered and paid week-by-week based on what was available. Among customers with race data, nearly all who purchased week-by-week were POC (95%, $n=57$), and the majority were Asian (77%, $n=46$) (Fig. 2b). Again, all customers with a high school education or less purchased week-to-week, and half of week-by-week customers (50%, $n=9$) had a college or graduate degree. Pre-paid seasonal customers, in contrast, overwhelmingly had a college or graduate degree (96%) (Fig. 2i).

Payment method

Nearly half of customers paid primarily by credit card (45%), almost as many by mobile payment (39%) and the remainder by cash (9%, $n=75$). Of mobile payment customers, most paid by Venmo (86%), with a few by PayPal (10%) and thirteen (4%) by CashApp. The clearest trends in payment methods can be seen among the customers who paid in cash: they were overwhelmingly Asian (88%), and also included all the customers who had a high school education or less (Fig. 2c, j). Customers who paid by credit card and mobile payments were more than two-thirds white (68%, $n=135$) and overwhelmingly highly educated, with 97% ($n=171$) holding a college or graduate degrees.

Fillets Versus Whole Fish

About a quarter of customers purchased whole fish (24%), with the remaining purchasing fillets (76%). Two-thirds of Asian customers purchased whole fish (67%), while most customers of other races purchased fillets (Black 79%, Latinx 91%,

other race 88%, and white 77%) (Fig. 2d). More customers with no college degree purchased whole fish ($n=6$) than purchased fillets ($n=3$), but the numbers in both cases were quite small (Fig. 2k).

Primary Communication Method

Most customers communicated with the program primarily through email (84%). About 10% of customers communicated with the program in-person, 4% through WeChat, and 2% by text. Of customers with demographic data, most who communicated with the program by email were white (67%, $n=140$), and nearly all of the white customers (99%) used primarily email to communicate (Fig. 2e, f). Whereas those who did not use email to communicate were overwhelmingly POC (97%), and more than half without a college degree (59%) (Fig. 2l, m). Customers reached in-person were all POC except one, and two-thirds were Asian. Customers reached through WeChat (17%) were all Asian, since all correspondence in the WeChat group was in Chinese. Again, all customers with high school education or less communicated with the program through means other than email.

Pickup Location

More than a quarter of customers picked up their seafood at a program site (29%), with 30% picking up at another POC-hosted site, and the remainder at a location hosted by a white host (42%) (Fig. 2g). (Note: 69 customers picked up at more than one location and were included at all locations where they picked up.) Customers who picked up at POC-hosted locations were mostly POC (57%, $n=61$), and the proportion of POC picking up at program sites was even higher (65%, $n=87$). In contrast, 73% of customers picking up at white-hosted locations were white. All customers with a high school education or less, and most of those with only some college (68%, $n=13$), picked up either at a program site or a POC-hosted location (Fig. 2n).

How Customers Heard About the Program

We were able to determine how 62% of customers heard about the program. Of those, about a third heard through another customer (34%), and another third through a staff member or student (33%), a fifth through the internet (20%), 9% through a program site, and 5% through press. Most POC customers were recruited in-person (through another customer, staff, or student, or at program sites) (89%), as opposed to 63% of white customers (Fig. 3a). Again, all customers with only a middle or high school education were recruited through staff or students or at a program site (Fig. 3b).

Of the 239 customers who indicated that they had been referred by another person by name (staff, student, customer), we had race or language data for 97 of the referrer-referral pairs (including three referees who indicated two races and were

included twice). Of those, 73% of customers referred were the same race as the person who referred them (Fig. 3c).

We had education data on 50 of referrer-referral pairs. Of those, 88% of customers were referred by other customers with similar college degree status: customers with college or graduate degrees or higher were largely referred by those who also had college or graduate degrees or higher (90%), and customers without college degrees were referred mostly by others without college degrees (77%) (Fig. 3d).

Model Results

Table 2 shows the most parsimonious models of the relationship between these inclusion strategies and participation of POC customers, Asian customers, Black customers, and customers without a college degree. Full model permutations can be found in SI Tables 1–4. The best fitting model for POC customers as a group included price, fish preparation, recruitment, and pickup location.

Patterns Among Specific Demographic Groups

Asian customers. The most parsimonious model for Asian customers included payment method, fish preparation, recruitment method, and pickup location. Our data indicated that accepting cash and offering whole fish were particularly effective for Asian customers. Furthermore, the majority of Asian customers heard about the program through a relationship: with a student or staff member, through a partner

Table 2 Binary logistic regression coefficients (b) for most parsimonious models. Complete model permutations can be found in SI Tables 1–4

Independent variables	POC customers	Asian customers	Black customers	Customers without a college degree
Price	-2.667		-1.291	-2.719
Payment schedule				
Payment method		-1.426	18.185	
Fish preparation	-1.015	-1.841	1.436	
Primary communication method			-18.493	-2.128
Recruitment method	-0.976	-1.793		
Pickup location	-0.795	-2.058		
Model summary				
N	159	132	117	118
AIC	149.46	112.94	80.56	44.817
R ² dev	0.59	0.69	0.30	0.68
Adj R ² dev	0.58	0.68	0.29	0.67

school, and/or at an outdoor market. Asian customers favored picking up at a POC-hosted location.

Black customers. For Black customers, price, payment method, fish preparation, and primary communication method were included in the most parsimonious model. Primary communication method was highly correlated with payment schedule in this model. There were many fewer Black customers than Asian customers in the data set, but a few trends are worth noting, with caution due to sample size. More Black customers purchased fillets than whole fish. Recruitment and communication relationships were key: more than 80% of Black customers heard about the program through relational means (e.g., at program sites, or through staff, students, or another customer), and more than a third of Black customers communicated with the program through means other than email.

Customers with a high school education or less. For customers without a college degree, price and primary communication method were included in the most parsimonious model. While the number of customers with a high school education or less was small ($n=9$), that group demonstrated strong and consistent patterns: every person in that group purchased week-by-week, paid in cash, and communicated through ways other than email or texting (e.g., WeChat, in-person at a program site, or through a staff or student). They also all heard about the program through a staff, student, or through partner school, and picked up either at a program site or a location hosted by a person of color.

Discussion

Diverse participation options increase inclusion

Over the past 5 years, Fishadelphia has built an alternative seafood supply chain that has engaged a demographically diverse array of Philadelphians. This outcome is not by accident, but the result of deployment of intentional inclusion strategies. The goal of this study was to assess the relationship of these strategies to the demographics of Fishadelphia's participants. Across the board, we found that the customers using one of Fishadelphia's inclusive options—discounted prices; accepting payments on a weekly basis; accepting cash; offering both whole fish and fish fillets; communicating with customers by text, in person, or by WeChat; recruiting through in-person networks; and offering pickup locations hosted by neighborhood institutions and people of color—were more likely to be POC than those customers using the other options (Fig. 2a-g).

Customers without a college degree also made up a higher proportion of the customers using the inclusive options in every case (Fig. 2h-n). However, the most striking patterns were evident among the subset of customers with only high school or middle school education experience: those customers exclusively used Fishadelphia's inclusive options. While this group was small, the universality of this pattern makes it noteworthy and of interest for future investigation.

With regard to the intersection between education level and race, it is worth noting that all of the high/middle school educated customers were POC. It is also

worth noting, however, that the sample size of customers without college degrees was small ($n=20$). We readily acknowledge that these limited sample sizes limit our ability to draw definitive conclusions from certain groups' choices, but again highlight the need for further investigation.

Are some of these strategies more important than others? Our models suggested that price was a key factor for Black customers and those without a college degree; payment method and fish preparation were important for both Black and Asian customers; recruitment and communication were important across the board. In some cases the effects of multiple strategies were closely correlated with each other such that the effects of a single strategy could not be isolated from the model results alone.

These correlations raise the question of whether some strategies are functionally redundant—would the same customers be included by using only one of those strategies, rather than multiple? For example, it's clear that the discounted price was a key factor for all inclusion target groups. But it is also clear that offering a discount was necessary but not sufficient for including at least some of these customers. Fishadelphia would not have reached many of those customers in the first place without staff or student connections, and would not have been able to communicate with them without WeChat or texting. In short, it was the *combination* of strategies that appealed to many customers—together, those strategies made Fishadelphia participation attractive and feasible for them. Apparent redundancy may actually be productive synergy.

From Access to Inclusion: Relationships and Geography are Crucial

Making something accessible does not in itself achieve inclusion goals—opening a door does not guarantee that anyone will walk through. The question remains: how and why did Fishadelphia's customers actually become customers? Answering this question requires considering the importance of interpersonal and geographic relationships.

Fishadelphia is embedded in a set of people and places. This analysis indicates that these people and places have been instrumental in the recruitment of customers: while some Fishadelphia customers learned about the program on the internet or through press coverage, most of them (75%, $n=399$) found the program through people (staff, students, other customers) or at one of the neighborhood-based places/institutions associated with the project (schools, outdoor market). Recruitment method and/or communication method were key variables in all of the models. While many of these customers' participation in Fishadelphia were enabled and sustained through the program's other inclusion strategies, their original recruitment stems from their familiarity with particular people and places.

The identities of the people and places through which customers initially encountered Fishadelphia had a crucial bearing on the characteristics of those customers. Simply put, Fishadelphia is composed of individuals who are part of the communities that the project aims to serve. This composition has been inherent to the design of the program from its inception: Fishadelphia has always been led by POC.

Students and staff have been central to recruiting customers of color, as well as less educated customers, through their social networks. Recruitment of some customers was only possible because of the cultural competence of Fishadelphia team members—for example, the ability to communicate in the customers' native language. Operating the program at culturally familiar locations within target neighborhoods has had a similar effect.

For the most part, Fishadelphia personnel recruited customers from within their own race (73% of the time). This pattern is especially true of the program's high school students, who recruited exclusively customers of their own races (typically family members and friends); however, same-race recruitment is prevalent across the board. It is important to note that this trend does not only result in recruiting POC customers: Fishadelphia's white customers also recruit customers who are predominantly white.

Individual social capital also matters. Forty-five customers were recruited to the program by only two students; the program's large number of Asian customers (disproportionate to the city's Asian population) can be largely attributed to these two individuals and their relationships. This pattern echoes the importance of strong leadership in sustainability projects more broadly (Gutiérrez et al., 2011).

Demographic affiliations were also seen in customers' choice of pickup location. White-hosted pickup locations attracted primarily white customers, while POC-hosted coolers attracted predominantly POC customers. The intertwined relationships of people and place are probably at play here. Philadelphia is a notoriously racially segregated city (Pew Charitable Trusts, 2021). Fishadelphia's geography reflects this segregation: white-hosted pickup locations tend to be in largely white neighborhoods, while POC-hosted locations, like the partner schools and the outdoor markets, tend to be located in predominately POC neighborhoods. However, Fishadelphia's experience also makes clear that pickup location is not merely a geographic consideration, but also a cultural and relational one. When schools closed in March 2020 as a result of the COVID-19 pandemic, program staff attempted to find another pickup location in the neighborhood, and found that Chinese-speaking customers were unwilling to pick up fish from a nearby stranger's house. In the end, a Chinese-owned corner store was used as a pickup location. Another customer, who is Black, preferred to travel four miles to pick up seafood from a (Black) relative rather than picking up from an unstaffed cooler within walking distance of her house.

These findings reinforce the importance of *relational motivations* for participating in Fishadelphia: value derived from personal connection to other participants. Cumming et al. (2020) identified these relational motivations as distinct from other forms of motivation—self-interested and altruistic—that have been associated with participation in AFNs. The large number of customers of color and/or without a college degree who were recruited into Fishadelphia based on a personal connection indicate how relational motivation can facilitate inclusion. This does not mean that POC and non-college educated customers do not also derive altruistic or self-interested value from participating; the categories are not mutually exclusive. However, our findings suggest that they would be unlikely to be part of Fishadelphia absent the relational connection.

None of these characteristics have led Fishadelphia to recruit exclusively POC customers or those with less formal education; the overall customer base is 46% white, and 53% people with graduate degrees. The project remains firmly connected to the typical well-educated, affluent base of the alternative food system (Hinrichs and Kremer 2002). However, as a POC-led organization with majority white customers, Fishadelphia inverts a common assumption: that inclusion is something white/privileged people (should) do to attract less privileged people into their programs. In Fishadelphia, by contrast, people with less privilege—POC, people with less formal education, young people, and/or immigrants—determine how customers become included, including those who may be more privileged. In so doing, Fishadelphia's leaders are working to sustain an AFN that is shaped by and welcoming to POC and people with less privilege, even as others with more privilege are also invited to join. How this strategy affects the culture of the program—and movement more broadly—over time remains to be seen.

Tactical and Structural Inclusion

In examining customer recruitment data, we have identified two general approaches to inclusion that Fishadelphia has taken: a *tactical* approach and a *structural* approach. The tactical approach includes specific programmatic elements employed by Fishadelphia to make participation more inclusive. The structural approach by contrast, reflects ways in which the people and places that comprise Fishadelphia are themselves integral to its inclusivity. Rather than what Fishadelphia *does*, structural inclusion can be seen as who Fishadelphia *is*.

Tactical inclusion methods can readily be transferred: differentiated or sliding scale price structures, accepting multiple forms of payment on different schedules, different (preparations of) products, and communicating across multiple platforms. Others have thoughtfully documented tactical ways to reach low-income communities (Lennon, 2018).

Structural inclusion approaches reflect the cultural particularities of a specific location and cannot be transferred as easily. Principles of structural inclusion, however, can be applied. To start, inclusion efforts are most likely to be successful when they are led by members of the communities they seek to serve. If a CSF program in Philadelphia led solely by wealthy and well-educated white people adopted the same inclusion tactics, we do not expect the same array of customers would have joined. Hiring and supporting leadership from communities of color and low-income communities not only increases program reach, but also gives these communities more agency and power in the food system.

Geographic choices also matter. Fishadelphia intentionally chose to be based at neighborhood schools—where families send their students to school and are therefore familiar institutions—rather than, for example, the new neighborhood food co-op, which, anecdotally, many long-term residents either did not know about, or viewed with unfamiliarity or suspicion (“Have you seen the prices in that place?”). Other programs looking to increase inclusion might consider the cultural valence of program sites.

No one tactical or structural approach guarantees effective inclusion in an alternative food network; as Fishadelphia's experience illustrates, meaningful

inclusion is most likely to emerge from context-specific synergies of multiple approaches and choices. Nonetheless, we offer the inclusion approaches discussed here as starting points for advancing inclusion in a variety of contexts. We maintain that if the alternative food movement is trying to build food systems that support the health of the environment, food producers, and eaters, we should do so in a way such that everyone—and not just an elite few—can participate. The work of Fishadelphia, and our examination of it, is shared here with the goal of helping make such systems possible.

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Declarations

Conflict of interest TY, GC, KHT, HL, CM, TP, NV, WW, and FY were paid employees or contractors of Fishadelphia during the time of the study.

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