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# Perceived barriers to client-choice conversion among Arkansas food pantries

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**Abstract**

Food insecurity continues to be a problem in the U.S., especially in Arkansas, which ranked second in the nation in food-insecure households in 2020 (Arkansas Food Bank, n.d.). To help address this, community-based food pantries make food available directly to area residents. Food pantry demand has increased during COVID-19, which has exacerbated food insecurity, particularly in the southern U.S. In Arkansas, the Arkansas Food Bank (AFB) serves as the state's largest nongovernmental food aid provider, working with 310 pantries.

Pantries typically distribute food to clients in one of two ways: by using a prefilled bag or box of items (the traditional model), or by allowing clients to select items (the client-choice model). Although research has shown that the client-choice model has a variety of benefits for client health and well-being, pantries using the traditional model remain the norm in Arkansas, accounting for 87% of total pantries. Currently, there is limited research that identifies perceived barriers to converting to a client-choice model among pantry managers, and that identifies whether perceived barriers and localized concerns contribute to different operation styles among pantries. To address this, we examined perceived barriers to client-choice conversion using a mixed-method survey conducted with 187 Arkansas food pantry managers.

We used common factor analysis to identify four barriers perceived by pantries to converting

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their traditional pantry to a client-choice pantry: (1) food supply concerns, (2) having limited non-food resources, (3) food waste concerns, and (4) confusion from clients and nutritional concerns. A cluster analysis of pantry respondents was also used, based on their level of concern for the four identified perceived barriers. Clusters we identified are Potential Converters (18.2%), Confusion Concerned pantries (56.7%), and pantries who are Skeptics (25.1%). Our findings suggest that food pantry stakeholders may need additional outreach and education concerning the various ways that client choice can be implemented. Our results provide valuable information for those involved in distributing food aid to food-insecure households.

**Keywords**
Food Pantry, Food Insecurity, Client-Choice Pantry, Food Bank

## Introduction

Food insecurity, defined as "limited or uncertain access to adequate food" (USDA ERS, 2021, "CNSTAT Review and Recommendations," para. 9), continues to be a public health issue experienced by 11% of U.S. households in 2018 (Coleman-Jensen et al., 2019). This number is often higher in southern states such as Arkansas; in 2018, 15.1% of Arkansas households experienced food insecurity (Coleman-Jensen et al., 2019; USDA ERS, 2021). More recent estimates indicate that over half a million Arkansans struggle with hunger, with 31% of these being children (Feeding America, n.d.). Food insecurity is often associated with a variety of health issues, including unhealthy eating practices (Gallegos et al., 2014), increased likelihood of chronic illness (Panet al., 2012; Parker et al., 2010; Seligman et al., 2010), fatigue (Munro et al., 2013), depression (Bruening et al., 2016), and issues with mental illness and stress (Martin et al., 2016).

To address food insecurity, community-based food pantries across the U.S. routinely make food available directly to area residents, and pantry demand has increased due to COVID-19 (Coleman-Jensen & Rabbitt, 2021). These pantries are often located in community centers, churches, college campuses, and hospitals to maximize contact with area residents (Gany et al., 2013). Many coordinate with an area food bank, which serves as a central storage and distribution center. The food bank provides the pantry with products they can distribute to community members in need. The Arkansas Food Bank (AFB) serves as that state's largest nongovernmental provider of food aid, working with 310 food pantries across the state. In 2019, the AFB distributed 26 million pounds (11.8 million kg) of food to over 280,000 residents across 33 counties and estimated that nearly 300,000 people were considered food-insecure in 2021 (Arkansas Food Bank, n.d.-b).

Food pantries typically distribute food to clients in one of two ways: by using a prefilled bag or box of items (the traditional model) or by allowing clients to select some or all of their items (the client-choice model). The client-choice model can be implemented using several different options. These include the supermarket option (clients can shop as if they were at a store), table option (food items or groups are displayed on tables), inventory list option (clients select from a given list), points or color-coded option (items are assigned points/colors), and food weight option (clients can select a set poundage of food), among others (Akron-Canton Regional Foodbank, 2012; Indiana's Emergency Food Resource Network, n.d.).

Client-choice pantries offer many benefits to the households they serve, who frequently prefer the ability to select their food items (Remley et al., 2010; Remley et al., 2019). Offering client choice gives clients more control and dignity over their food choices (Wilson et al., 2017), and has also been linked to a reduction in pantry and household food waste (Pruden et al., 2020; Remley et al., 2010). The nutritional value of food offered at client-choice pantries may also be higher compared to traditional pantries, due to clients requesting fresh food items (Bryan et al., 2019). Prior studies have also suggested that offering client choice can promote healthier choices (Remley et al., 2013; Wilson et al., 2017), has been linked to increased fruit and vegetable consumption (Martin et al., 2013), and has the potential to combat food insecurity (Remley et al., 2006).

In contrast to the client-choice model, tradi-

tional pantries may be associated with a variety of concerns. These include clients receiving items they do not need or will not use, and pantries wasting resources by stocking unwanted food (Remley et al., 2006).

Despite the benefits of client choice, traditional pantries remain the norm. This is especially true in Arkansas, with the AFB reporting that only 13% of its 310 active food pantries have offered client choice since 2018, despite efforts by the AFB to increase the number of pantries offering client choice. The various options of the client-choice model could be used to help reduce any perceived barriers and risks of conversion by pantry managers, such as concerns over inadequate storage space, and concerns over clients perhaps choosing foods that are lower in nutritional value. Identifying perceived barriers to client-choice conversion among pantry managers, as well as examining their interest in implementing a client-choice model, is an important first step toward increasing the number of client-choice pantries in operation.

The research is currently limited that identifies perceived barriers to client-choice conversion that food pantries might face. Wood (2020) examined barriers and benefits of pantries across the U.S. based on seven client-choice pantries surveyed. Similarly, Remley et al. (2006) focused on pantries in a single county in Ohio. No known study yet has conducted a statewide examination of perceived barriers to client-choice pantry conversion. Identifying barriers to client-choice conversion provides valuable information for state food banks, government agencies, and other public health and nutrition stakeholders involved with client-choice pantry initiatives, in Arkansas and other states across the U.S. The objectives of this study are to examine the feasibility of client-choice pantries through three areas: (1) identify the types of barriers that Arkansas food pantry managers consider to be impediments to adopting client choice, (2) examine whether clusters of pantries differ in terms of the types of barriers they find most concerning and their interest in converting to client choice, and (3) investigate whether clusters of pantries differ across demographic and operating characteristics.

## Literature Review

### *Benefits of Offering Client Choice*

According to Rowland et al. (2018), offering client choice allows food pantry clients the ability to choose foods that they prefer, rather than receiving items that they may dislike, are unable to consume, or cannot properly prepare. Food pantry managers often assume that clients can both adequately prepare and safely store the foods they receive, but this may not always be the case (Pritt et al., 2018). Lack of housing, appliances, and kitchen supplies can often affect clients' ability to consume the foods they receive. For example, if a client receives a can of food without a pull tab and lacks access to a can opener, they may not be able to consume the item. Giving clients a choice in the foods they receive better equips them to select items they can and are likely to consume. Client choice can also benefit the pantry as it gives the pantry the ability to track client food preferences, which can be useful for planning purposes and determining future food procurement (Remley et al., 2006).

Client choice may also benefit clients from a health and nutrition standpoint. Prior research by Bryan et al. (2019) found that client-choice food pantries often feature foods with a wider range of nutritional quality compared to more traditional food pantries. Long et al. (2020) concluded that client-choice pantries were more likely to offer healthier foods to their clients than pantries that did not offer any choice. While some pantry clients may prefer healthier foods, others may be concerned about the nutritional quality of the foods they receive due to health concerns. Remley et al. (2019) found that clients living with chronic health conditions often expressed a desire to be able to choose pantry foods based on their nutritional value or product ingredients. For pantry clients who are actively managing diabetes and/or other chronic health conditions, allowing some choice as to the foods received may help them accommodate any necessary dietary restrictions.

### *Potential Barriers to Client-Choice Conversion*

Despite the potential benefits of client choice, there are also potential barriers to pantry conversion. Identifying and addressing these perceived

barriers to client-choice conversion is necessary for more traditional pantries to shift to client choice. One perceived barrier may be the availability of food items. Bush-Kaufman et al. (2019) encountered a food pantry administrator who stated that their pantry often receives "junk" that clients would not necessarily take if given a choice, suggesting that transitioning to client choice may lead to food waste being passed on to the client. Pantry layout may also be a perceived barrier to client-choice conversion. Long et al. (2020) found that inadequate refrigerator storage may be a barrier to the types of foods that can be offered, thus limiting food pantry offerings. However, the Akron-Canton Regional Foodbank (2012) offers suggestions to help address this, noting that pantries can promote the selection of foods with a short shelf life (such as fresh produce) by allowing clients to take as much as they prefer or by offering cooking demonstrations with food samples and recipe examples.

Increases in food waste brought on by increasing the amount and variety of fresh produce being offered may also be a potential barrier to conversion (Rowland et al., 2018), although Wilson et al. (2017) found that offering a client-choice model may lead to a reduction in food waste. According to The Ohio Association of Second Harvest Foodbanks (2016), implementing a client-choice model also can save money for the pantry, as it may help limit food waste. By allowing clients to select their own food, especially at pantries that only allow one visit per month, clients can select foods that complement the existing food items already in the household (The Ohio Association of Second Harvest Foodbanks, 2016). Whether food pantry managers perceive food waste as a potential barrier to client-choice conversion, though, is an area in need of further research.

In addition to food-related concerns, adopting a client-choice model may also affect pantry operations from a volunteer and staff perspective. Rowland et al. (2018) concluded that transitioning from a traditional model to client choice may be challenging: volunteers often need to be retrained, and the transition to client choice needs to be effectively communicated to all stakeholders. Remley et al. (2006) suggested that when transitioning from a traditional model to client choice, food pantry staff and volunteers may have increased interactions with pantry clients. Such increased interactions may present a barrier to client-choice conversion due to their potential time commitment. However, as previously discussed, there are a various ways that client choice can be implemented; these variations in client choice may help alleviate some of these concerns. Identifying the types of perceived barriers to client-choice conversion that pantry managers find most concerning would provide useful information for those looking to shift traditional pantries toward client choice.

## Applied Research Methods

### *Objectives*

To examine the feasibility of client-choice pantries, the objectives of this study are to: (1) identify the types of barriers that Arkansas food pantry managers consider to be impediments to adopting client choice; (2) examine whether clusters of pantries differ in terms of the types of barriers they find most concerning, and their interest in converting to client choice; and (3) investigate whether clusters of pantries differ across demographic and operating characteristics. We hypothesized that there may be significant differences between pantry clusters in terms of the types of barriers that each cluster identifies as the most concerning. Food pantries in Arkansas often vary in terms of their operating characteristic, and such variations may result in differences in perceived barriers to client-choice conversion. We also hypothesized that there may be significant differences between pantry clusters in terms of their operating characteristics.

### *Pantry Manager Survey*

To examine the above-mentioned objectives, the researchers collaborated with the Arkansas Food Bank (AFB) to conduct an exploratory mixed-methods survey of Arkansas pantry managers. The AFB serves as the state's largest nongovernmental food aid provider, working with over 350 food pantries across the state. The survey featured questions concerning the feasibility of, and potential barriers to, offering client choice. Questions concerning the number of client households served, operational characteristics, and pantry demo-

graphics were also included.

Respondents were presented with 19 possible barriers to client-choice conversion and asked to rate on a 5-point scale how likely it was for each item to be a potential issue for their pantry. These barriers were developed in coordination with the Arkansas Food Bank and piloted by both AFB staff members and a small number of pantry managers in the AFB network. To help ensure that all possible barriers were identified, respondents were also presented with an open-ended question on perceived challenges and barriers to client-choice conversion. The survey took respondents 15 to 20 minutes to complete. The study protocol was approved by the university's Institutional Review Board for research on human subjects.

The final survey was distributed in spring 2021 to 366 Arkansas pantry managers via the Qualtrics survey platform, using an email list of pantry managers provided by the AFB. The survey had an overall response rate of 51% ($n$=187), with a 36% response rate on the open-ended questions. To incentivize participation, at the conclusion of the survey, 150 respondents were randomly selected to each receive a $150 AFB account credit for their organization. Credits were added to the pantry's existing AFB account, allowing them to order and have delivered in-stock items. Pantries often prefer to purchase from the AFB as items are tax-free and deeply discounted compared to grocery stores.

## *Data Analysis*

### *Factor and cluster analysis*

To identify potential barriers to conversion, common factor analysis was conducted in Stata (version 17.0) to examine relationships between 19 possible barriers included in the survey. Factor loadings obtained from this analysis were used to identify perceived barriers that were correlated with each other. As noted by Gifford and Bernard (2008), factor analysis can be used as a confirmatory, rather than exploratory, technique when a priori hypotheses are made. Varimax rotation was used, and barriers with rotated factor loadings greater than 0.3 were retained. K-medians cluster analysis was next used to categorize respondents into distinct clusters based on their responses to the perceived barriers identified in the common factor analysis. Comparisons between cluster groups in terms of the identified factors were also examined using a series of Wilcoxon rank-sum tests, with $p$-values corrected for multiple comparisons using Benjamini-Hochberg correction (Benjamini & Hochberg, 1995; Benjamini & Yekutieli, 2001; Newson, 2010).

### *Thematic analysis*

Responses to the open-ended questions were coded and analyzed using a thematic analysis approach adapted from Braun and Clarke (2012). A series of themes and subthemes were then identified from the open-ended responses. Thematic analysis has been utilized in similarly designed studies. Helmick et al. (2021) previously used thematic analysis to understand the barriers to successfully implementing nutrition policies in food pantries across the United States.

## Results and Discussion

### *Barrier Types Identified in the Factor Analysis*

Of the 19 possible barriers to client-choice conversion that were included in the survey, 18 had rotated factor loadings greater than 0.4 (see Table 1). One barrier, which concerned possible language barriers between clients and pantry staff and volunteers, had a factor loading below 0.3 and was excluded. From the remaining 18 items, four barrier types were identified from the common factor analysis; together they account for 68.97% of the explained variance in the data, as shown in Table 1.

The first barrier type, "Food Supply Concerns," indicates that perceived barriers concerning the availability of food items, such as the variety and volume of food available, were highly correlated with each other. The second barrier type, "Limited Nonfood Resources," suggests that barriers focusing on nonfood resources, such as the availability of staff and volunteers, pantry operating hours, pantry budget, and wait time for clients, were correlated with each other. The barrier type "Food Waste Concerns" grouped together two barriers concerned with excess product and food waste. Lastly, the barrier type "Confusion and Nutritional Concerns" grouped together barrier

**Table 1. Rotated Factor Loadings for Possible Barriers to Implementing a Client-Choice Model, by Identified Barrier Type (*n*=187)**

| | Identified Barrier Type [a] | | | |
|---|---|---|---|---|
| **Possible Barriers [b]** | **Food Supply Concerns** | **Limited Nonfood Resources** | **Food Waste Concerns** | **Confusion and Nutritional Concerns** |
| Not enough culturally appropriate foods available for clients to choose from | 0.5146 | | | |
| Inconsistency of available food items | 0.7689 | | | |
| General lack of inventory | 0.6890 | | | |
| Limited amount of donations | 0.6200 | | | |
| Variety of food available | 0.8457 | | | |
| Volume of food available | 0.8447 | | | |
| Longer wait times for clients | | 0.6247 | | |
| Lack of volunteers/staff | | 0.7596 | | |
| Limited pantry hours | | 0.9101 | | |
| Lack of shelving/physical space to display food options | | 0.4166 | | |
| Pantry operating budget | | 0.4730 | | |
| Uncertainty concerning how much excess product might be left over | | | 0.9002 | |
| Increased food waste | | | 0.8188 | |
| Some food groups having more items on the shelves than others | | | | 0.4436 |
| Pantry volunteers/staff not understanding what a client-choice model is | | | | 0.5939 |
| Additional training needed for volunteers/staff to implement | | | | 0.4430 |
| Clients not understanding how to use/cook certain food items | | | | 0.6878 |
| Lack of client understanding of basic nutritional concepts | | | | 0.7833 |
| **Explained variance, %** | 26.1570 | 15.8692 | 8.4568 | 18.4904 |
| **Cumulative variance, %** | 26.1570 | 42.0262 | 50.4830 | 68.9734 |

[a] Factor loadings obtained from common factor analysis; factor loadings below 0.3 omitted.
[b] 4-factor solution based on 18 of 19 possible barriers included in the pantry manager survey; possible barriers are ordered by identified barrier type.

items that were concerned about the nutritional implications of converting to a client-choice model and worries about client choice being confusing. These included concerns with clients not understanding basic nutritional concepts and certain food groups having more items displayed on the pantry shelves than others. Also included in this last barrier type were concerns about pantry staff and/or volunteers not understanding the client-choice model, pantry staff and/or volunteers needing additional training to implement client-choice, and clients not understanding how to use certain food items.

### *Themes and Subthemes Identified from Open-ended Responses*

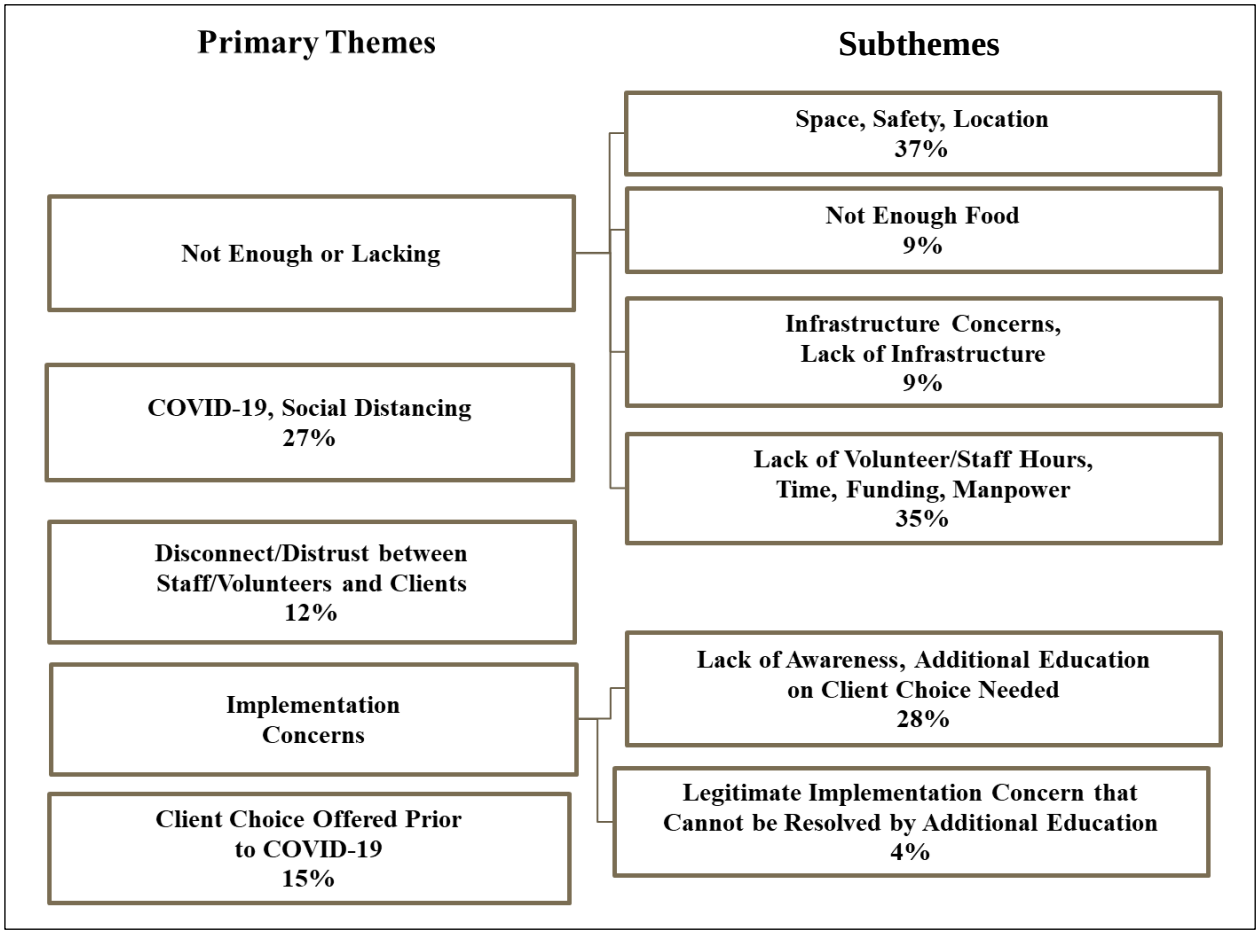
Of the 187 survey participants, 71.1% responded to the open-ended question on perceived challenges and barriers to client-choice conversion. The themes and subthemes identified from these

responses can be viewed in Figure 1. Five primary themes and six subthemes were identified. These included concerns related to pantry space and location (37%), volunteer and staffing needs (35%), lack of awareness concerning client-choice options (28%), COVID-19 concerns (27%), and perceived client greed and distrust (12%). Apart from COVID-19 concerns and perceived client greed and distrust, the themes and subthemes identified were related to the four barrier types identified in the earlier factor analysis.

Two perceived barriers to client-choice conversion identified from the open-ended responses were not included in the earlier factor analysis. These included concerns about a potential disconnect or distrust between food pantry volunteers and staff and pantry clients, which was identified in 12% of the open-ended responses. These responses mentioned a concern that clients might become "picky" or "greedy" if client choice was implemented. Some of these responses also mentioned concerns about the nutritional knowledge of clients.

The second identified barrier focused on COVID-19 and social distancing concerns, which were mentioned by 27% of the open-ended responses. The COVID-19 pandemic has been noted to affect client choice, as some pantries that previously offered client choice may temporarily use another model (Schoenfeldt, 2020). Some of the identified concerns seem to indicate that many pantry managers view client choice as having to have their pantry set up as a grocery store, where clients then shop. However, there are several dif-

**Figure 1. Themes and Subthemes Identified from Open-Ended Responses, with Percentages (*n*=133)**



ferent options for implementing client choice, and having the pantry set up to resemble a store is only one option (Akron-Canton Regional Foodbank, 2012; Indiana's Emergency Food Resource Network, n.d.). Other options for implementing client choice include allowing clients to choose items from a list, or color-coding items and allowing clients to select a set number of items from each color category.

### *Pantry Manager Clusters*

Using the four barrier types identified in the factor analysis, cluster analysis was next used to segment pantry managers into distinct groups. The cluster analysis revealed three clusters of pantry managers, as shown in Table 2. The first cluster, "Potential Converters," consisted of 18.2% of respondents and had median scores below 2.0 for each of the identified barrier types, indicating that pantry managers in this group did not perceive any of the potential barriers as being an issue to them converting to a client-choice model. The second cluster, "Confusion Concerned," consisted of 56.7% of respondents and had median scores below 3.0 for every identified barrier type except for the confusion and nutritional concerns factor, which had a median score of 4.61. This seems to indicate that for this group, potential barriers to conversion focus on concerns with client choice being confusing for clients, volunteers, and staff alike, as well as concerns about clients not having the nutritional knowledge to choose their own items. The last cluster of pantry managers, "Skeptics," consists of 25.1% of respondents and had median scores above 4.0 for each identified barrier type, indicating that managers in the cluster perceived all four of the barrier types as likely to be an issue in converting their pantry to a client-choice model.

### *Comparisons and Pantry Operating Characteristics, by Cluster*

Non-parametric Wilcoxon rank-sum 2-sample tests were used to examine differences between pantry-manager clusters for each of the four identified

**Table 2. Comparison Statistics for Median Identified Barrier Type Values and Interest in Client-Choice Conversion, by Cluster (*n*=187)**

| | Cluster [a] | | | Comparison | | |
|---|---|---|---|---|---|---|
| | Potential Converters (18.2%) | Confusion Concerned (56.7%) | Skeptics (25.1%) | Potential Converters to Skeptics | Confusion Concerned to Skeptics | Potential Converters to Confusion Concerned |
| **Identified Barrier Type [b]** | **Median (IQR) [c]** | **Median (IQR)** | **Median (IQR)** | **Benjamini-Hochberg Adjusted Rank-sum p-value [d]** | | |
| Food supply concerns | 1.85 (0.64) | 2.75 (0.84) | 4.96 (0.65) | **<0.001*** ** | **0.073*** | 0.378 |
| Limited nonfood resources | 1.63 (0.43) | 2.17 (0.86) | 4.41 (0.54) | **0.046**** | **0.089*** | 0.885 |
| Food waste concerns | 1.36 (0.41) | 2.43 (0.62) | 4.36 (0.55) | **0.009*** ** | 0.215 | 0.432 |
| Confusion and nutritional concerns | 1.88 (0.47) | 4.61 (0.73) | 4.93 (0.85) | **0.014**** | 0.838 | **0.098*** |
| **Interest in Client-Choice Conversion [e]** | 4.82 (1.51) | 3.97 (1.39) | 1.70 (0.92) | **0.028**** | **0.042**** | 0.419 |

[a] Clusters obtained from K-medians clustering.
[b] 4-factor solution obtained from common factor analysis; 5-point scale with 1=not at all likely to be a potential issue and 5=very likely to be a potential issue in converting to client choice.
[c] Interquartile range in parentheses.
[d] All p-values obtained from nonparametric Wilcoxon rank-sum 2-sample tests, and have been adjusted for multiple comparisons using Benjamini-Hochberg correction. Values in bold are significant at the 10%*, 5%** and 1%*** level.
[e] 5-point scale with 1=not at all interested and 5=very interested in client-choice conversion.

barrier types. Since Shapiro-Wilk tests for normality indicated rejection of normality for all the barrier type comparisons between clusters, nonparametric tests were used. Benjamini-Hochberg correction was also used to control the false discovery rate and thus correct for multiple comparisons. Comparisons between clusters for the four identified barrier types can be viewed in Table 2.

Pantry managers in the Potential Converters cluster compared to the Skeptics cluster were significantly less concerned about all four barrier types being possible issues with client-choice conversion, with $p$=0.046 or better for all four comparisons. Pantry managers in the Confusion Concerned cluster were significantly different at the 10% level from the Skeptics cluster on two of the four identified barrier types: food supply concerns ($p$=0.073) and limited nonfood resources ($p$=0.089). Those in the Confusion Concerned cluster made up 56.7% of our sample, indicating that most pantry managers in Arkansas may be primarily concerned with food-supply issues and having limited nonfood resources if their pantry were to consider converting to client choice.

Lastly, managers in the Confusion Concerned cluster were more concerned (significant at the 10% level) than managers in the Potential Converters cluster about the confusion and nutritional concerns barrier type ($p$=0.098). For both the Potential Converters and the Confusion Concerned clusters, the confusion and nutritional concerns barrier type had the highest median rating out of the four barrier types. Food-pantry stakeholders who educate and train pantries on how to implement client choice may benefit from focusing on ways to make offering client choice a simple process for clients, pantry staff, and volunteers alike. Outreach efforts focused on implementing client choice could also address any possible nutritional concerns that food pantries may have—such as clients selecting too much from any one food group.

The pantry operating characteristics of respondents are presented by cluster and in aggregate in Table 3. Overall, respondents served 254 clients

**Table 3. Pantry Operating Characteristics, by Identified Cluster (n=187)**

| | Cluster [a] | | | |
|---|---|---|---|---|
| Demographic Characteristics | Potential Converters (SD) | Confusion Concerned (SD) | Skeptics (SD) | Aggregate (SD) |
| Client households served monthly | 180.18 (174.49) | 295.87 (464.10) | 209.94 (230.39) | 253.86 (378.42) |
| Number of days open to the public monthly | 8.33 (10.53) | 6.92 (6.51) | 5.60 (6.36) | 6.84 (7.30) |
| % of pantries with hours after 5PM | 22.73% (42.89) | 14.08% (35.03) | 12.90% (34.08) | 15.32% (36.17) |
| % of pantries with weekend hours | 31.82% (47.67) | 23.94% (42.98) | 25.81% (44.48) | 25.81% (43.93) |
| Total annual operating budget (in US$) | $15,524.30 (8652.20) | $14,184.93 (8185.27) | $10,365.80 (7026.02) | $13,453.38 (8140.61) |
| % of food typically donated | 38.33% (31.79) | 31.49% (29.61) | 35.53% (33.30) | 33.70% (30.79) |
| % of food typically purchased | 61.67% (31.80) | 68.51 (29.67) | 64.47 (33.29) | 66.30 (30.80) |
| Number of volunteers monthly | 8.90 (5.31) | 15.96 (16.51) | 12.27 (14.42) | 13.82 (14.80) |
| Number of paid staff monthly | 1.52 (2.80) | 1.26 (5.34) | 1.17 (1.80) | 1.28 (4.30) |
| **% of Respondents** | 18.2 | 56.7 | 25.1 | 100 |

[a] Clusters obtained from K-medians clustering.

per month and were open seven days per month to the public, with 15.3% of pantries offering client hours after 5 pm and 25.8% of pantries open on the weekend. The total annual pantry operating budget of respondents averaged US$13,453, with 66.3% of food purchased by the pantry. For all three clusters, a greater number of pantry volunteers (14 volunteers on average) compared to paid staff (one staff member on average) were responsible for distributing food to clients. No statistically significant differences were observed between pantry clusters for each demographic characteristic.

## Conclusions

Our findings suggest that food-pantry stakeholders need additional outreach and education on how client choice can be implemented. Results also suggest that outreach efforts to convert traditional pantries to client choice should focus on alleviating concerns that client choice is confusing for pantry volunteers, staff, and clients alike. This includes providing additional training for staff and volunteers to understand and implement a client-choice model. Additional education efforts should focus on alleviating nutritional concerns, which can include making sure food groups are equally represented in the client-choice model, providing clients with information concerning basic nutritional concepts, and providing clients with information on how to use and prepare pantry food items.

Our study identifies a cluster of pantry managers who may be more receptive to converting their pantry to client choice. Efforts to convert traditional pantries to client choice should consider focusing on potential converters first, which can serve as an example and catalyst to other pantries in the state. Our results also have important implications for those involved in distributing food aid to food-insecure households. Professionals working with food pantries and food-pantry managers can use the perceived barriers to client-choice conversion that were identified here to not only inform their educational programming, but also to inform how they interact with food-insecure individuals. Pantry managers and food banks alike can use this information to reflect on practices at their own pantries and determine how they can better serve their clients. Such efforts could focus on addressing the concerns of pantry managers around nutrition, as well as concerns that the client-choice model is too confusing.

### *Limitations and Future Research*

Limitations of this study include a survey sample composed of only Arkansas food pantries. Future efforts should explore whether the types of perceived barriers identified here hold across other states in the U.S. Additional research could include examining the variations in the client-choice model that traditional pantries would be most willing to adopt, as well as awareness by pantry managers as to the benefits of client choice and various ways it can be implemented. Further research can also explore the implementation practices of the small number of food pantries in Arkansas that are currently utilizing client choice, the satisfaction of Arkansas clients served through a client-choice pantry, and the long-term impacts of the COVID-19 pandemic on client-choice implementation. Lastly, several open-ended responses mentioned a distrust of clients regarding clients' perceived ability to select the "right" foods under client choice. Exploring this potential disconnect between pantry volunteers and staff and the clients they serve could be key to improving the experience of pantry clients.

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