

LOW-INCOME CONSUMER ATTITUDES
TOWARD CONTENT, PRICE, AND VALUE IN FOOD CHOICE:
A STUDY OF A DISCOUNTED FOOD BUYING PROGRAM

A Thesis

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ABSTRACT

Food insecurity is a leading health concern, and private and public food assistance programs address this issue. A discounted food-buying (DFB) program may enhance food security. This thesis used the Theory of Planned Behavior to investigate how low-income consumers approach food-purchasing decisions by evaluating attitudes toward and barriers to purchasing a DFB food package through a mixed methods approach including a cross-sectional survey and analysis of three years of program sales data. Survey respondents (n=76) included DFB customers and non-customers. Respondents reported protein, vegetables, and fruit of highest importance and were willing to pay more for protein items. Package sales followed seasonal trends and were associated with price, but not measured value. Unwanted items were the leading barrier to purchasing a package. Food preferences may be prioritized highest when making the DFB purchasing decision. Low-income consumers' food-purchasing decisions may have implications for programs designed to meet food insecure consumers' needs.

BIOGRAPHICAL SKETCH

Krista Galie is a registered dietitian who earned her Bachelor of Science degree in Nutritional Sciences in the Division of Nutritional Sciences at Cornell University, and completed her dietetic internship at Cornell as well. Her education gave her a thorough understanding of the scientific process and research analysis, and as a result, helped to shape her perspective of what it means to practice in an evidence-based field.

Through her experiences as a graduate teaching assistant for Nutrition through the Life Cycle, a group fitness instructor and instructor mentor, and a past National Nutrition Month coordinator during her dietetic internship, Krista has a passion for inspiring others to achieve their goals, be it academic, fitness, leadership, or otherwise. However, she has learned that when working with people, it is not about her own views or goals, but about theirs.

Understanding the thought processes of others can strengthen relationships, deepen empathy, and increase capacity to help. By appreciating the innumerable interconnected factors that influence one's behavior, we can more clearly understand how to make our difference. Krista hopes to blend her research-driven practice, now informed by the Theory of Planned Behavior, with her love of teaching and management as she moves forward in her career as a dietitian.

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CHAPTER 1

INTRODUCTION

This thesis will explore the important issues of food insecurity in the United States, food assistance programs, and low-income consumer food acquisition. It will draw on the scholarly literature on consumer food choice, price, and value, and use the Theory of Planned Behavior to address the aim of enhancing our understanding of the relationships between low-income consumer attitudes toward food, price, and value, purchasing behavior, and perceived behavioral control in regard to food acquisition.

BACKGROUND

Food insecurity is a lack of access to enough food for a healthy, active lifestyle for all family members¹ and is one of the leading health issues facing the nation today. The prevalence of food insecurity is widespread, affecting an estimated 12.7% of American households in 2015,¹ and food insecurity has lasting health implications.^{2,3} The USDA defines low food security as reporting reduced quality, variety, or desirability of diet with little or no indication of reduced food intake and very low food security as reporting multiple instances of disrupted eating patterns and reduced food intake.⁴ Ninety-eight percent of very low food secure individuals reported having worried that food would run out before they had money to buy more, and 96% reported they could not afford to eat a balanced

meal.⁴ In 2015, 5.0% of Americans experienced very low food security at some point during the year,⁴ but not consistently throughout the year, illustrating the fluid nature of food insecurity. This lack of access to food leads to health consequences such as increased prevalence of chronic disease among adults,³ limitations in activities of daily living among seniors,² and poorer health in children.²

In an effort to address food insecurity in the nation, both public and private food assistance programs have been established. The Supplemental Nutrition Assistance Program (SNAP) is the largest federal program currently addressing this issue, as it served 22.5 million households in 2015.⁵ In order to receive SNAP benefits, individuals and families must meet certain requirements related to income, resources, and employment; yet, these rigid cutoffs for assistance qualification may not accurately capture those falling in and out of food security more fluidly on a month-to-month basis. On the other hand, even those who do qualify for assistance may choose not to receive it. Data from an annual report series on SNAP program participation revealed a national average of 83% participation in SNAP among those eligible to receive benefits in 2014.⁶ A USDA literature review of determinants of program participation suggested that low-income households' decisions to participate in SNAP were a function of fluctuations in available alternatives for acquiring food.⁷

Other alternatives include other government programs, as well as private food assistance programs. The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the National School Lunch Program, and the School Breakfast Program are examples of other federal programs that are specifically targeted toward children in families with low-income. A number of private food assistance programs that may or may not include federal support components exist as well. These include programs targeted toward adults – food pantries, soup kitchens; older adults – senior housing that provides meals, Meals-on-Wheels; and children – programs that provide after school snacks, child care food programs, and summer food service programs for children. The nation’s largest network of these programs is Feeding America, representing around 58,000 programs, such as grocery programs, meal programs, food-related benefits, and non-food support, through its member food banks.⁸

One type of private food assistance option that may be offered through a food bank – or other agencies such as churches, schools, and community-action organizations – is a discounted food-buying (DFB) program. The organization purchases food in bulk at a low price, builds packages made up of a variety of food items unselected by the customer, and offers these bundles of food at a discounted price, passing on the original savings to the customer. Purchasing packages of food at a discounted price may help address some of the concerns of the low and very

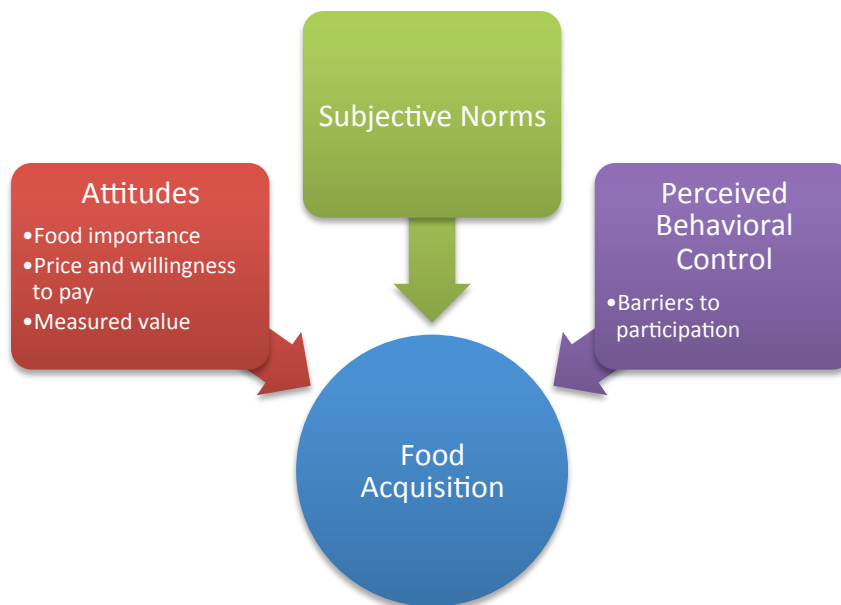
low food secure households, such as running out of food before having enough money to buy more. Some DFB programs do not require a certain income level for package purchase nor have a binding agreement for purchase each month; DFB programs with minimal stipulations – such as the lack of a need to qualify for participation and the option to choose every month whether or not to purchase a food package – may be more conducive to meeting the needs of a household that fluctuates in and out of food security on a monthly basis. When planning and implementing these programs, however, the question remains how to ensure such programs are effective and efficient at meeting the needs of the food insecure population. One approach to answer these questions is to understand how this population makes food-purchasing decisions.

THE THEORY OF PLANNED BEHAVIOR

Predicting human behavior is simultaneously one of the most complex and one of the most sought after goals pursued by researchers in many fields. Many attempts to explain human behavior have relied heavily on broad constructs; however, focusing on these hazier concepts does little to explicitly advance understanding of behavioral determinants.⁹ Although innumerable factors may contribute to any particular behavior by any particular person at any particular time, the specific question that leads to applicable significance is, “What constructs are actually predicting behavior?” One elegant model of human decision-making

that aims to address specific antecedents to behavior is the Theory of Planned Behavior (TPB).¹⁰ This well-supported theory often is used to explain food choice. The TPB intertwines attitudinal, social, and motivational influences on behavior to predict food choice distinctly from food preferences,¹¹ acknowledging many of the other factors that can influence this behavior of interest. In the context of a DFB program, this theory can be used to identify influences on the behavior of food acquisition in a food insecure population. This thesis used the TPB to evaluate the attitudes and perceived behavioral control that lead to food acquisition, and specifically in this study, the decision to purchase or not purchase a DFB program package (Figure 1).

Figure 1
Conceptual Framework



The first construct in this theory that predicts behavior is attitudes. An attitude is defined as the sum of beliefs multiplied by the likelihood of their respective outcomes,¹¹ or in other words, value multiplied by expectancy. An important consideration regarding these beliefs is the distinction between all beliefs and salient beliefs,¹² for not all beliefs are salient at a given time, as salience is born out of importance.¹³ Attitudes toward objects (in this case, a DFB food package) are determined by salient underlying beliefs computed by weighting the perceived likelihood of salient outcomes occurring with the value attached to those particular outcomes.¹¹ So an individual's attitude toward receiving a DFB program food package will partially depend on the value that is placed on that purchase. In this thesis, attitudes explored included: importance placed on foods offered in the packages, willingness to pay (WTP) for certain package types as a measure of perceived value, objective measures of value (discount, energy content, and servings of food), and price.

Subjective norms are the second construct of this theory and are defined as perceptions of general social pressure to perform or not to perform a behavior.¹¹ This element, when blended with attitudes, takes human decision-making beyond the personal sphere – what a person believes – to a socially interactive sphere – what others are perceived to believe – and how others' beliefs affect the personal sphere. Just as behavioral beliefs are thought to underlie attitudes, normative

beliefs are thought to underlie subjective norms.¹¹ Just as behavioral beliefs are represented as the product of strength of the belief and the likelihood of the outcome, normative beliefs are represented by the product of social pressure and motivation to comply.¹¹ This thesis did not directly measure social norms, but the interaction of this construct with the measured constructs emerged as a theme and briefly will be discussed.

The third construct of this theory, perceived behavior control (PBC), complements attitudes and social norms by acknowledging the variability of personal agency and perceived control. Just as attitudes are preceded by behavioral beliefs, and subjective norms are preceded by normative beliefs, PBC is preceded by control beliefs. Control beliefs are calculated through the product of perceived frequency of occurrences of facilitating or inhibiting factors and perceived power of those factors to facilitate or inhibit the behavior in question.¹¹ Participation in DFB programs requires a significant amount of planning, as customers order and prepay for their package in advance and must plan to pick up their purchase at a designated location and time. PBC is assessed in this thesis by exploring potential barriers to program participation and food package purchase, as customers and potential customers seek control over the balance of factors facilitating participation and those inhibiting it.

The TPB takes the complex concept of human decision-making and human behavior and outlines the constructs that predict it. By studying some of these constructs individually, and pairing them with outcome measures of program sales, a deeper understanding of the food acquisition process for individuals with low-income may emerge. Such an understanding may be useful in informing the plethora of programs designed to address food insecurity.

The following two chapters will investigate DFB programs as one way to address food insecurity in the US. Chapter two analyzes the TPB concepts of attitudes and PBC within the context of customers and non-customers of a specific DFP program. Low-income consumer attitudes, values, and barriers to package purchase are discussed in tandem with program package sales. Chapter three explores the implications of DFB programs as one possible mechanism to meet low-income consumer needs and address food insecurity.

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CHAPTER 2

LOW-INCOME CONSUMER ATTITUDES TOWARD CONTENT, PRICE, AND VALUE IN FOOD CHOICE:

A STUDY OF A DISCOUNTED FOOD BUYING PROGRAM

INTRODUCTION

In 2015, 42.2 million Americans lived in food insecure households, including 32.8 million adults and 13.1 million children.¹ 15% of households (15.8 million) were food insecure.¹ This widespread food insecurity affects nearly every community in the United States.² Food insecurity is associated with negative health outcomes,³ pointing to an overarching problem of health and quality of life disparities for individuals, families, and communities.

When financial resources are constrained, as they are in food insecure households, the allocation of available funds becomes a crucial consideration, and priorities may shift. For example, people with low income, particularly participants of the federal Supplemental Nutrition Assistance Program (SNAP), may consider food secondary to more urgent pressures,⁴ leading to a higher proportion of income being spent on necessities like housing,⁵ and leaving fewer available resources for food spending. With limited food funds, people must carefully plan their food purchasing behavior. According to the Theory of Planned Behavior (TPB),⁵ behavioral influences such as attitudes, social norms, and perceived behavioral

control (PBC) interact to lead to a behavior; in this case, the behavior is food acquisition. Some research explores the relationship between those behavioral influences and food acquisition to investigate the considerations of low-income consumers when making food choice decisions. Key relationships relate to important food and food characteristics, price, and value.

IMPORTANT FOOD AND FOOD CHARACTERISTICS

Fruit and vegetable expenditure is a leading concern for low-income shoppers⁶⁻⁸ as well as government agencies and policy makers; as a result, fruit and vegetable expenditure is often a key construct in research studies examining food choice in the SNAP-eligible population. Based on current evidence, limited resources for food predicts lower diet quality,⁹ of which fruit and vegetable consumption is a crucial part. SNAP participants, compared to higher income groups, score lower on the Healthy Eating Index, a measure of diet quality that assesses adherence to the Dietary Guidelines for Americans,⁹ including eating a variety of fruits and vegetables as part of a healthy diet. When making produce purchasing decisions, perceived health benefits are constantly evaluated against other important factors, including price, quality, and time.⁷ For example, although purchasing fruits and vegetables may be a higher priority for low-income shoppers with children,⁷ SNAP households report relatively low spending on produce.¹⁰ In two studies examining opinions of SNAP program stakeholders – a spectrum of

individuals working on issues related to SNAP, public health, and food insecurity – there was high agreement that SNAP may not provide adequate benefits to enable participants to purchase nutrient-rich foods and achieve a healthy, balanced diet.^{4,11} However, increased SNAP benefits are not expected to increase fruit and vegetable spending significantly because other food items, such as meat or frozen prepared foods may take priority.¹² As such, among people who use food assistance programs, meat and other protein items are often desired.^{13,14} When food funds are limited, this prioritization of food items becomes a key determinant of food purchasing decisions.

In terms of important food characteristic considerations, a large analysis of NHANES data revealed taste of food was important for people of all income levels; however, for the SNAP-eligible households that engaged in cooking practices at home, the importance of ease of preparation of food and storage life of food were of higher importance than for non-SNAP-eligible households.⁸ In a qualitative study of low-income shoppers, freshness of produce (perceived as quality) was a concern, in addition to safety of food and availability of choice,⁷ showing a valuing of variety and choice. In addition, familiarity was identified as an important factor for low-income shoppers.⁶ Beyond food specific characteristics, such as taste, ease of preparation, storage life, freshness, and familiarity, the price and value assigned to food items matter as well.

PRICE AND VALUE

When financial constraints are present, consideration of price when making food choices may increase. In general, food price is a more important factor for food choice for individuals with low income than with high income.^{6,8,15} For higher income consumers, an inverted U-shaped price acceptability curve describes consumers' willingness to purchase a certain product, with products priced at either extreme seen as less desirable.¹⁶ However, for lower income consumers, this price acceptability function decreases from low price to high price, indicating a lower price threshold.¹⁶ In a study with low-income, rural heads of household, some participants identified price as the sole determinant of what foods were bought that week, whereas others identified cutting out whole food groups as a strategy to save on cost.⁷ The influence of price of one food group – produce, in this example – varied according to the importance of other food groups.⁷ There were not enough food funds to purchase everything desired, so sacrifices had to be made.

In a cross-sectional survey of Dutch low-income and high-income food shoppers, this idea of price consciousness, or heightened awareness of price, was expanded to include value consciousness as well. Low-income shoppers focused on both price *and* value, more so than high income shoppers.⁶ Households with children at risk for very low food security often used food shopping strategies –

such as shopping at multiple stores to find the best value, buying in bulk, and stockpiling food on sale – to get the best value.¹⁷ Consumers with low-income have a higher responsiveness of demand to a change in income,¹⁸ and in a 2004 price acceptability study, household income had an effect on whether or not shoppers bought a certain product,¹⁶ illustrating the importance of price as it relates to the influence of perceived value. This interaction between price and perceived value becomes important in this discussion, for food price and food value are highly important to consumers with low income.

DISCOUNTED FOOD BUYING PROGRAMS

Understanding the attitudes and perceptions of low-income consumers is important when designing programs to meet their food needs. One way to reach the food insecure population is through a discounted food-buying (DFB) program. DFB programs offer packages of food at a discounted price through agencies such as food banks, churches, schools, and community-action organizations. These organizations purchase large quantities of food from USDA allotments, wholesale retailers, and some local stores, and pass the savings to the customers. A food bank in upstate New York state offers such a program that differs from most other food bank programs in two main ways: 1) the program does not require customers to meet a certain income level to qualify for participation, and 2) the program requires customers to pay with cash or SNAP benefits. The program is open to

anyone, but is designed to help increase self-sufficiency among food insecure individuals by helping them stretch their monthly food dollars.

The food bank offers monthly food packages consisting of 12-15 preselected items that include a mix of produce, protein, and pantry items. The customers order the number of food packages they want, prepay with cash or SNAP benefits two weeks in advance, and pick up the packages at the end of each month at one of 40 designated locations, referred to as program sites. One challenge of a program like this is offering a variety of quality food options while keeping the price low for customers. One study exploring preferences of emergency food program clients found they most often preferred to receive meat/poultry/fish, vegetables, and fruit.¹³

To address the challenge of balancing quality with price while also keeping customer preferences in mind, the food bank experimented with offering three different focused packages: a produce package with 5-7 items, a protein package with 4-6 items, and pantry package with 8-10 items. These packages were smaller and less expensive, but offered at a lower discount. Example contents of the four package types are given in Table 1.

Table 1**Sample Contents of Discounted Food Package by Package Type**

Mixed Package	Focused Packages		
	Protein Package	Produce Package	Pantry Package
Chicken Kabobs, 1 lb Fish Sticks, 1 lb Kielbasa, 13 oz Ground Turkey, 1 lb Pierogies, 13 oz Onion Rings, 1.5 lb Cookie Mix, 12.5 oz Soup, 18 oz Applesauce, 15 oz Green Beans, 14.5 oz Lettuce, 1 head Mushrooms, 8 oz	Chicken Kabobs, 1 lb Fish Sticks, 1 lb Kielbasa, 1 lb Ground Turkey, 1 lb Peanut Butter, 18 oz	Apples, 3 lbs Carrots, 1 lb Mushrooms, 8 oz Lettuce, 3 heads Pears, 3 lbs	Baking Mix, 40 oz Oatmeal, 16 oz Egg Noodles, 12 oz Tuna Fish, 5 oz Applesauce, 15 oz Mixed Veggies, 15 oz Orange Juice, 64 oz Instant Potatoes, 15 oz Grape Jelly, 12 oz Mac n Cheese, 7.25 oz

As with many food items offered through food bank programs, the perishability of those items is a consideration for both the program coordinators and customers. As part of this DFB program, the majority of protein items were offered frozen. Produce items were a mix of fresh and canned items, with the focused produce package offering the majority as fresh. Offering food items in frozen and canned forms helps to ensure quality is preserved as the packages are delivered to the different program sites. Quality is also a consideration for customers. One study of low-income consumer produce purchases noted quality, perceived as freshness, to be a factor in food choice, as a hierarchy of food forms was considered when purchasing produce throughout the month – first fresh, then frozen, and lastly canned as a “last reserve.”⁷ DFB programs may consider

important food and food preferences, food characteristics, price, and value when selecting the monthly package contents.

OBJECTIVE

The main objective of this thesis was to use the theory of planned behavior to investigate how low-income consumers approach food-purchasing decisions by evaluating customer attitudes toward, use of, and barriers to purchasing a DFB program food package. To address this objective, this study aimed to answer three specific research questions:

- 1) What are the attitudes among program customers and non-customers toward food choice and DFB program offerings?
- 2) How do price and measured value relate to package sales?
- 3) What are the perceived barriers to participating in the DFB program?

METHODS

DESIGN

This study employed three design elements as part of a mixed methods approach to answer the research questions. The first design element was a cross-sectional survey in October 2015 with a convenience sample of two groups – DFB program customers and non-customers. The survey was structured and included 15 questions asking about attitudes and perceived behavioral control. The second

design element was an interrupted time-series analysis of mixed packages sales and price change. The third design element was an examination of focused package sales during a three-month trial period, when focused packages were offered along with mixed packages at three sites. This study was exempt from review by the Cornell University Institutional Review Board on the use of Human Subjects in Research.

SAMPLE: SURVEY

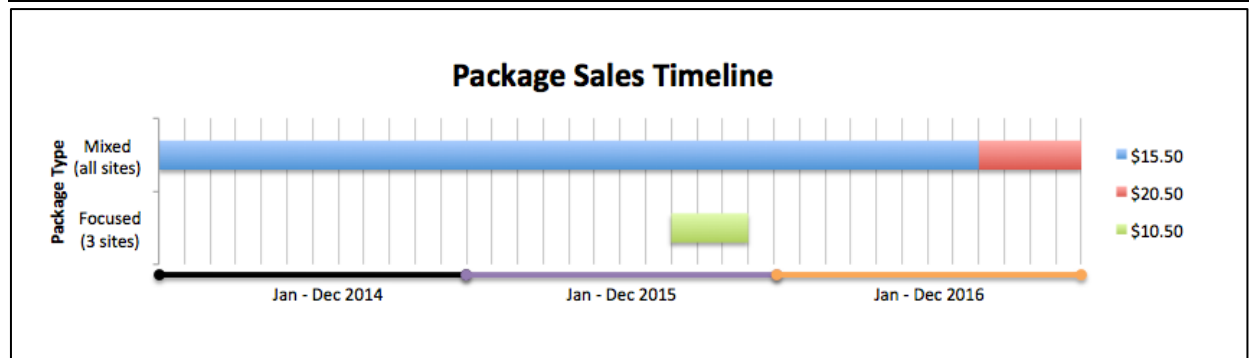
DFB customers and non-customers were sampled from three different locations: one site offering only mixed packages, one trial site offering focused and mixed packages, and one community-based organization offering emergency food assistance but no DFB program. Seventy-six respondents comprised the convenience sample for the survey and were recruited via face-to-face public intercept at the three locations.

SAMPLE: SALES

Mixed package sales data included total monthly sales across all sites from January 2014 – December 2016 (n=36 months). From January 2014 through August 2016, the price of the mixed packages was \$15.50 (32 months) and increased to \$20.50 in September 2016 (4 months) (Figure 2). This \$5.00 price increase represented a 32% increase in price. Focused package sales data included

total sales across three sites during the three-month trial period (September – November 2015), for protein, produce, and pantry separately (Figure 2).

Figure 2
Packages Offered and Price during Data Collection Period



MEASURES

The survey instrument was developed to assess two constructs: attitudes (importance and willingness to pay) and perceived behavioral control (barriers to participation) (see Appendix 1). To assess attitudes regarding importance, existing measures¹³ were adapted into Likert-type scale¹⁹ survey questions. Package content categories included: fruit, vegetables, protein (defined as meat, poultry, and fish items), cheese, pasta, beans, soup, and cereal. Respondents marked one of the following for each content category: very important, important, somewhat important, or not important. New dichotomous variables were created during the analysis phase to represent important (very important plus important) and not important (somewhat important plus not important). For some analyses, a

participant was considered to find pantry contents important if at least one of the following were marked important or very important: soup, cereal, pasta, or beans.

To assess attitudes regarding price, a contingent valuation exercise was used to determine willingness to pay (WTP). The survey asked respondents to indicate all price levels at which they would be willing to pay for various packages.

Package types corresponded to DFB program package offerings, including mixed, protein, produce, and pantry packages. Price level options began at \$5.50 and increase by \$5.00 increments up to \$25.50. For some analyses, variables were created to indicate WTP relative to price at the time the survey was administered – less than the current price of the package, at least the current price of the package, and more than the current price of the package.

To assess barriers to participation in the program, respondents were asked to indicate ('yes' or 'no') potential reasons, listed in another study,²⁰ for not participating in the program in any given month. Barrier options included: 'I don't need the food,' 'I don't want the food,' 'It's too expensive,' 'I don't want to prepay,' 'I forget to order,' 'The ordering system is complicated,' 'I don't have transportation to the pickup site,' 'I don't have enough SNAP benefits,' 'I have difficulty carrying the food home,' 'I am uncomfortable using the program,' and 'I am not eligible for the program.' Respondents were counted as "yes" for any financial barrier if they affirmed at least one of the following barriers: 'the package

is too expensive,’ ‘I don’t have enough SNAP benefits,’ or ‘I don’t want to prepay for the package.’ The survey also included one open-ended segment for general comments.

Recipients of food assistance were defined as reporting participation by anyone in the household in at least one of the following programs: SNAP, food pantry, soup kitchen, senior housing that provides meals, Meals-on-Wheels, WIC, National School Lunch Program, School Breakfast Program, programs that provide after school snacks, child care food programs, or summer food service programs for children.

Price change was measured with an indicator variable, such that \$15.50 was coded (0) and \$20.50 was coded (1). Four measures of value were considered: discount, energy content, abundance, and protein abundance (Table 2). To obtain data with which to calculate measured value, on-line resources of a local branch of a large-scale discount store were used to identify items comparable to package foods, and retail price, calories, total servings, and servings of protein were extracted. Extracted items were summed to obtain package totals.

Table 2
Value Measures

Value Measure	Value definition
Discount (%)	$1 - \left(\frac{\text{package price}}{\sum \text{retail prices}}\right) * 100$
Energy Content (kcal)	100s of calories per package
Abundance (servings)	Servings of food per package
Protein Abundance (servings)	Servings of meat/poultry/fish per package

To describe seasonality of sales, months were grouped by season: Winter (January, February, March), Spring (April, May, June), Summer (July, August, September), and Fall (October, November, December), aligning with the season at the beginning of each month when the package would be ordered.

ANALYSIS

Chi-squared tests were used to detect differences in characteristics between DFB customers and non-customers. To compare importance between food type, a generalized linear mixed model with a binomial distribution was used to model the probability of importance as a function of food type using a random effect at the subject level. Post-hoc pairwise comparisons between food types were performed using Tukey's honest significant difference (HSD) tests.

Percentages WTP less than the current price of a package, at least the current price of the package, and more than the current price of a package, were reported for all package types. Independent samples t-tests were used to detect differences in WTP between DFB customers and non-customers. A linear mixed-effects model was used to model WTP as a function of package type using a random effect at the subject level. Post-hoc pairwise comparisons between package types were performed using Tukey's HSD pair-wise tests. T-tests were used to detect differences in mean WTP by importance for fruit, vegetables, protein, and pantry items. Lastly, affirmations of barriers to participation were summarized with percentages.

Sales of focused packages (produce, protein, and pantry) were summed across all three months for all three trial sites. Sales of mixed packages were summed across all sites, and means and standard deviations were calculated for each season. Differences in mixed package sales across seasons were identified with ANOVA F-tests, as were differences across years, and pairwise comparisons were made with Tukey's HSD tests.

Lastly, discount, energy, abundance, and protein abundance means and standard deviations for each monthly package were calculated. Linear models of package value and also price change regressed on package sales were used to find predictors of sales, and the p-value for each was calculated.

RESULTS

SURVEY SAMPLE CHARACTERISTICS

The majority of survey respondents were White/Caucasian, female, and 35-64 years old (Table 3). Participant characteristics did not differ between customers and non-customers with the exception of food assistance received (40% vs 100%; $p < 0.0001$).

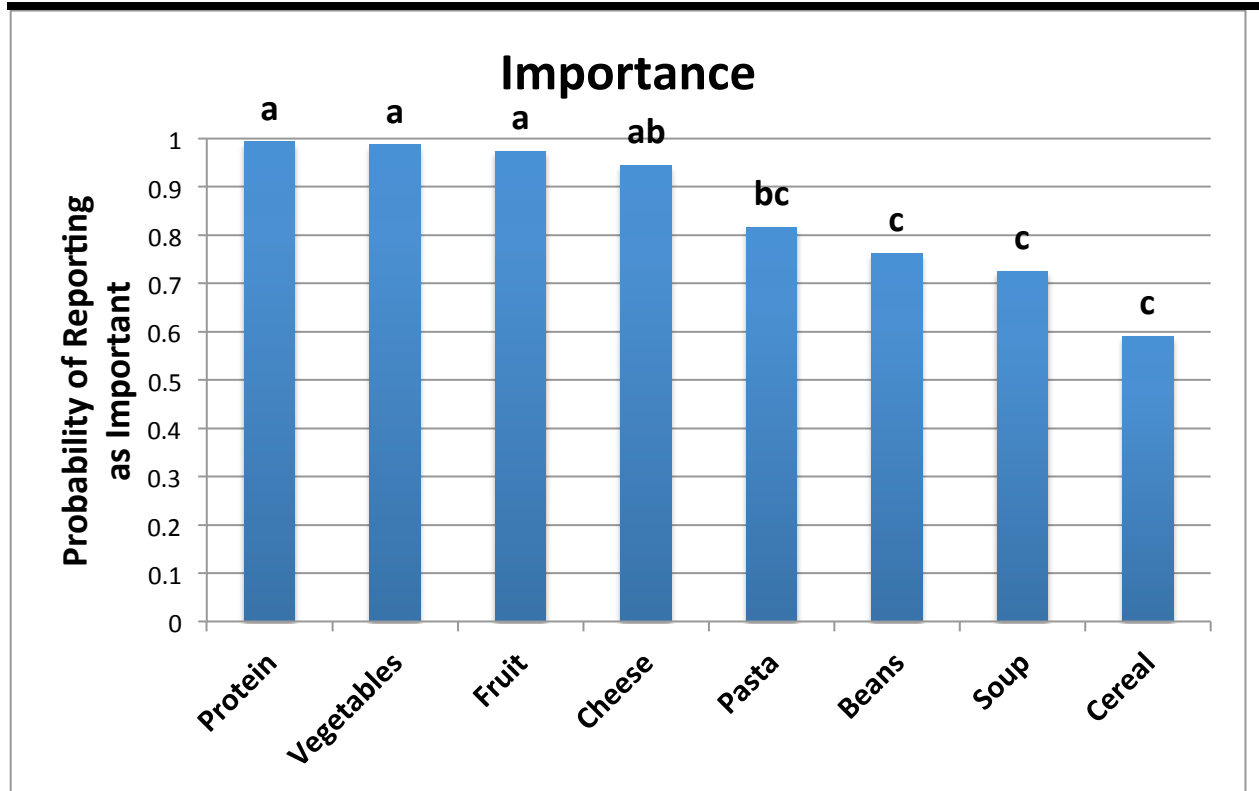
Table 3
Survey Sample Characteristics

	n	(%)
Respondents (Total)	76	(100)
Sampling Locations		
No Packages Offered	28	(37)
Focused and Mixed Packages Offered	27	(36)
Mixed Package Offered	21	(28)
Female	60	(79)
Age		
18-34 years	13	(17)
35-64 years	38	(50)
65+ years	25	(33)
White/Caucasian	69	(91)
Employment		
Employed full time	11	(14)
Employed part time	7	(9)
Unemployed	18	(24)
Retired	35	(46)
Rather not say	5	(7)
Food Assistance Received	47	(62)
DFB program customers	52	(68)

WHAT ARE THE ATTITUDES AMONG PROGRAM CUSTOMERS AND NON-CUSTOMERS
TOWARD FOOD CHOICE AND DFB PROGRAM OFFERINGS?

All content items were reported as important by more than half of respondents (Figure 3). The three categories with the highest probability of being reported as important were protein, vegetables, and fruit, and they were statistically different from pasta, beans, soup, and cereal, but not cheese.

Figure 3
Content Category Importance (n=76)



^{a,b,c}Tukey's HSD post-hoc tests ($P < 0.05$): Importance is statistically equivalent for foods labeled with the same letter, and statistically different from foods labeled only with different letters. Reported importance of protein, vegetables and fruit are all different from reported importance of pasta, beans, soup, and cereal. Reported importance of cheese is different from beans, soup, and cereal.

Participant attitudes related to WTP are shown in Table 4. Mean WTP did not differ between customers and non-customers for any package types (mixed: \$13.97 vs \$12.12, $P=0.3124$; produce: \$9.04 vs \$8.75, $P=0.7692$; protein: \$11.52 vs \$13.91, $P=0.108$; and pantry: \$9.52 vs \$8.47, $P=0.3304$). The mean WTP for the mixed and protein packages were significantly higher than the mean WTP for produce and pantry packages ($P<0.05$). Notably, 46% of respondents were willing to pay more than the price of the protein package at the time of the survey.

Table 4
Willingness to Pay by Food Package Type (n=76)

Package Type	Price at time of survey	WTP		Willing to pay...			
		Mean	SD	at least current price		more than current price	
				Count	%	Count	%
Mixed	\$15.50	13.41	(5.25) ^a	41	(60)	9	(13)
Protein	\$10.50	12.26	(4.79) ^a	56	(79)	33	(46)
Produce	\$10.50	8.95	(3.65) ^b	38	(59)	7	(11)
Pantry	\$10.50	9.20	(3.67) ^b	40	(62)	10	(15)

^{a,b}Tukey's HSD post-hoc tests ($P<0.05$): Mean WTP is statistically equivalent for package types labeled with the same letter, and statistically different from package types labeled with different letters.

The relationship between importance of content categories and WTP is shown in Table 5. No association was found between important food types and WTP for the corresponding package type (e.g. importance of fruits or vegetables and WTP for produce packages). However, several associations between importance and lower WTP for some package types were noted. For example,

reporting fruit and pantry items as important was associated with lower WTP for a mixed package (P=0.044 and P=0.049, respectively). Reporting protein items as important was associated with lower WTP for a pantry package (P=0.008). And reporting fruit as important was associated with lower WTP for a protein package (P=0.006).

Table 5
Association between Importance and Willingness to Pay

Attitudes	n	Mean Willingness to Pay (n=76)							
		Produce	P	Protein	P	Pantry	P	Mixed	P
Fruit									
Important	67	9.18	0.26	11.79	0.01*	9.11	0.64	12.90	0.04*
Not Important	8	6.86		16.12		9.79		18.36	
Vegetables									
Important	70	9.17	0.17	12.12	0.08	9.26	0.46	13.33	0.37
Not Important	5	5.38		14.50		8.00		15.50	
Protein^a									
Important	70	8.91	0.78	12.22	0.81	9.20	0.01*	13.41	0.83
Not Important	3	8.00		13.00		10.50		13.83	
Pantry Items^b									
Important	63	8.92	0.81	12.25	0.96	9.31	0.50	13.03	0.05*
Not Important	13	9.14		12.32		8.68		15.50	

*Significant at P<0.05 level

^aProtein was defined as meat, poultry, and fish items

^bPantry items included: beans, cereal, pasta, and soup

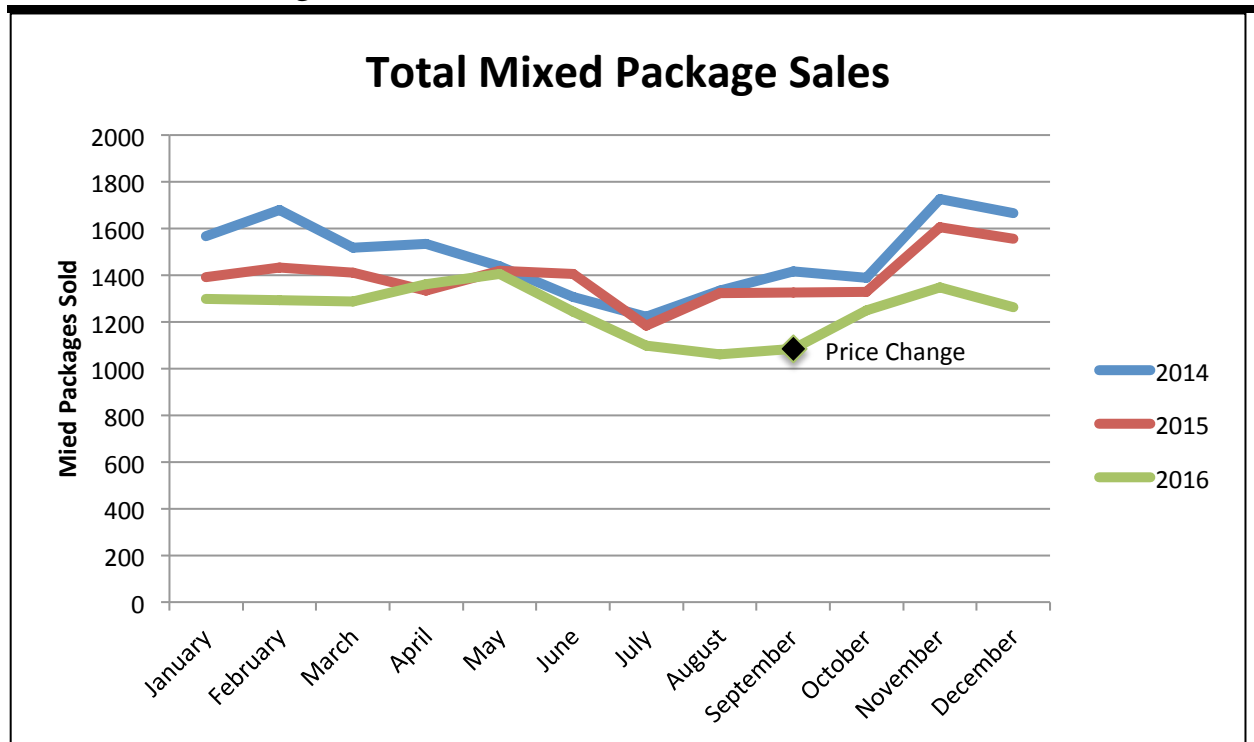
During the 3-month focused package trial period, 419 mixed packages, 100 produce packages, 71 pantry packages, and 47 protein packages were sold. Mixed

packages sold the most, and among focused packages, protein packages sold the least.

HOW DO PRICE AND MEASURED VALUE RELATE TO PACKAGE SALES?

Mean monthly mixed package sales were 1375 packages (SD=159). Package sales fluctuated by season (Figure 4), with the most packages sold in the fall (mean: 1459, SE: 42.86), followed by winter (mean: 1431, SE: 45.03), spring (mean: 1383, SE: 27.93), and summer (mean: 1228, SE: 42.86). Summer sales were significantly different from Fall ($P=0.0057$) and Winter ($P=0.0171$), and trended toward being significantly different from Spring ($P=0.0951$). Sales did not differ between any other season pairs.

Figure 4
Total Mixed Package Sales



After controlling for season, price change was significantly associated with fewer monthly sales ($b=-228.92$, $P=0.002$). Average monthly sales after the price increase (September – December 2016) were 15% lower than the same four-month period in 2015 ($P=0.0064$), and 20% lower than that period in 2014 ($P=0.0010$). However, sales for September – December 2014 and 2015, when package price remained unchanged, were not significantly different from each other ($P=0.1686$).

Table 6 shows the relationship between mixed package sales and value. On average, packages were discounted 43% from retail price, contained 8,600 calories, and 65 servings of food, 24 servings of which were protein foods (Table 6). When adjusted for season, no measures of value were significant predictors of sales. In all models, each season was a significant predictor of sales.

(n=36 months)	Mean	SD	Unadjusted	Adjusted for Season
Discount (%)	43	7	-205.3	-37.9
Energy (100s kcals)	86	12	-1.2	-1.8
Abundance (servings)	65	12	3.4	1.8
Protein abundance (servings)	24	6	-11.9**	-6.1

**Significant at $P<0.001$ level

WHAT ARE THE PERCEIVED BARRIERS TO PARTICIPATING IN THE DFB PROGRAM?

Lastly, according to survey data, the most often reported barrier (or possible barrier for non-customers) to purchasing a DFB package in a given month was not ‘wanting’ the contents of the package (55%). The next most often reported barrier was a financial barrier (including ‘the package is too expensive’, ‘I don’t have enough SNAP benefits’, or ‘I don’t want to prepay’ for the package, 21%). Seven respondents offered suggestions for changes to package contents, including: requesting packages tailored to vegetarians, vegans, or those with food allergies, wanting more protein, wanting dairy options, or requesting a “checklist for items in the box.”

DISCUSSION

PROTEIN

Protein, vegetables, and fruit were most important to low-income consumers, and all were significantly more important than any pantry item. This emphasis on protein was consistent with existing literature, where protein items were prioritized and often preferred in emergency food programs.^{7,12,13} In a 2016 USDA report on SNAP household food expenditures, ‘meat, poultry, and seafood’ were the highest category of expenditures for both SNAP and non-SNAP households,²¹ indicating high WTP for this category. Overall, survey respondents’

WTP was the most for a protein-focused package, and 46% indicated a WTP more than the current price. However, importance of protein was not reflected in sales. Protein abundance was not associated with mixed package sales, and protein-focused packages sold the least during the trial period.

Together, these findings highlighted a discontinuity between protein importance and protein purchasing behaviors, suggesting other values were more important, or more outwardly apparent, at the times when the purchasing decisions were made. For example, the lack of association between protein servings and sales may have suggested that the lack of protein items relative to other monthly packages was not immediately apparent. Moreover, because focused packages and mixed packages were offered simultaneously, customers may have perceived the mixed package as providing sufficient protein items and therefore did not want to purchase an additional focused protein package. Furthermore, the observed seasonality of package sales may have, in part, reflected additional behavioral influences. November mixed packages appeared to contain fewer servings of protein than other months but consistently had high sales. Consumers who found protein important and were willing to pay more for protein may still have purchased this package because other behavioral influences, such as the social norm of holiday food abundance, might have been more important than protein abundance at that time. More research is needed to understand more clearly low-

income consumers' values and the interrelationship between those values in purchasing decisions.

PRODUCE

Vegetables and fruit were equally important to protein, coinciding with research that suggested produce was also important among low-income consumers.^{7,13} However, this importance was not reflected in customers' WTP, as survey respondents were willing to pay less for produce and pantry packages compared to the protein and mixed packages. Existing literature pointed to cost as a main barrier to fruit and vegetable purchase,²² partially exemplified by low SNAP expenditure for fruits and vegetables.¹⁰ Low WTP as a measure of perceived value could have coupled with the perception of high cost of fruits and vegetables in a way that led to low purchase. Yet, despite the barriers of cost and usual low SNAP expenditure on produce, the produce packages sold the most of the three focused packages during the trial period, suggesting that the DFB program offered the produce package at a price that was perceived as affordable and that customers were willing to pay. A 2009 USDA report assessed price elasticity – change in demand for a certain product in response to a change in price – of fruits and vegetables, and proposed that fruit and vegetable purchases may increase if price was lowered.²³ Because customers were, according to sales data, willing to pay for the produce package, perhaps the \$10.50 price tag was low enough to encourage

the purchase of items deemed important, thus addressing the financial barrier to fruit and vegetable purchase.

PANTRY

Pantry items were the least important, and significantly less important than protein, vegetables, fruit, and sometimes cheese. This relative lack of importance echoed food pantry visitor preferences for receiving fresher food.^{13,14} Such emphasis on fresher food over nonperishable items may have reflected the high availability of these items through programs such as food pantries, where they were available at no cost.

PRICE AND MEASURED VALUE

Underlying the discontinuity between importance, WTP, and sales were the additional considerations of price and value. Literature was mixed on the importance of price and value,⁷⁻¹⁰ but this study suggested price mattered more than measured value to low-income consumers. The \$5.00 price increase for the mixed package was the only value measure that predicted sales and was associated with 15-20% fewer sales than in the two years prior. Existing research on price perception and consumer behavior suggested that this price change was noticeable, unexpected, outside of an acceptable range, and had great potential to impact consumer behavior.

These DFB packages were offered at \$15.50 for 28 years before the 32% price increase occurred. In one study, 15% deviations from the existing price were correctly identified by consumers 84% of the time,²⁴ suggesting this price change was noticeable. Introducing a product at a discounted price and then raising it likely contributed to the adverse effect on sales, for customers may have adopted the low price as the expected price, and thus perceived the new price as unacceptably greater.²⁵ If this new unacceptable price was outside the customers' existing price acceptability range, therein lied the potential for a substantive impact on purchase.²⁶ The low-income status of these customers added another dimension to the effect of price. Evidence suggested that the impact of price on purchase decisions was differentially affected by income status.^{16,27,28} Low-income consumers tended to have a lower price threshold,¹⁶ and those with a low threshold were more sensitive to price changes.²⁷

In the context of a DFB program, the interaction of income and price threshold could have been more complicated. One study suggested the relationship between income and sensitivity to price was dependent on situational variables, such as consumption occasion or social context,²⁸ or in this case, season or barriers to participation in a given month. Additionally, perceptions of this specific price change may have been interpreted within the context of available funds and social norms surrounding the use of those funds. One study that interviewed SNAP

outreach workers found that decreasing stigma surrounding SNAP participation was identified as a key outreach need to increase SNAP enrollment.²⁹ Acquiring food through a DFB program may have removed some of the existing stigma surrounding SNAP participation that was more likely to occur in a more public setting, such as a grocery store. The price change, however, may have increased the complexity of the link between SNAP use and DFB program use. The minimum SNAP allotment in fiscal year 2016, a monthly allotment that some customers of this program used to purchase the package, was \$16.00.³⁰ This amount covered the old mixed package cost, but not the new cost. How this shift affected consideration of social norms in the process of deciding to purchase a package amidst a population that might be sensitive to stigma remained unexplored in this study.

None of the other value measures – discount, energy content, abundance, nor protein abundance – predicted sales of mixed packages after adjustment for season. This strong seasonality effect coupled with the lack of association between attitudes (importance, WTP, and value) and behavior suggested that there existed other determinants of behavior not examined in this study that influenced package purchase. One study suggested that perceptions of savings in terms of discount did not differ between discounts of 30, 40, or 50%.³¹ The average discount range of a DFB package was 36% - 50%, within the suggested range of little difference in

discount perception, and offered another potential explanation for a lack of association between discount and sales. Additionally, much of the literature surrounding price and value evaluated single items or made item-by-item comparisons. This study, however, evaluated a program that offered many food items at one price, perhaps making discount or value less immediately apparent to customers. This obscured value of the packages may have hindered the assessment of how value as an attitude related to behavior in this study.

PERCEIVED VALUE

Although every definition of value used in this study was an example of measured value – an objective package characterization that can be quantified – themes of perceived value arose from data on barriers. For example, food preference was the main motive for the decision not to purchase a DFB package, as the top reason customers chose not to purchase a package in a given month was that they did not ‘want’ the contents of the package. Emphases placed on these characterizations that are not easily quantified – such as preference, perishability, and WTP – were also woven into the decision-making process of package purchase and may have been more salient than measured value. Offering a package with a high perceived value, even with measured value held constant, may have varied month to month depending on preference for items in the package, perishability and perceived freshness, and self-efficacy related to preparation of individual

package items. Even WTP, a quantifiable measure, may be more accurately referred to as perceived value. Past research has shown that hypothetical WTP may be considerably higher than actual WTP,^{32,33} particularly with the use of a contingent valuation exercise in assessing that outcome.³⁴ Using price change and WTP data in conjunction with one another within the context of what is known about typical contingent valuation responses helped to explain the likely gap between attitudes from survey responses and behavior from sales data. All together, the measures of perceived value not comprehensively assessed in this study likely contributed a substantial amount of behavioral influence in the context of DFB package purchase.

PERCEIVED BEHAVIORAL CONTROL

Nearly half of the survey respondents offered comments in the open-ended section of the survey that suggested they wanted more control over package contents. The feasibility of offering packages for special diets or with self-selection was uncertain, and would require increased training, volunteer time, and money, thereby presenting a tradeoff between increased PBC and a decrease in one measured value.

Taste, over other beliefs, has been found to be highly associated with attitudes toward consumption of certain foods,³⁵ and this emphasis on food preferences could have acted as the primary filter of package purchase. The DFB

program offerings were highly restrictive in terms of package contents and time and location of pick-up, especially when compared to other food acquisition options. For example, grocery stores or food pantries have more food choice and fewer restrictions on when one can visit. In similar programs, such as community supported agriculture programs, lack of choice is often listed as a source of customer dissatisfaction.³⁶ As another illustration, a randomized controlled trial of a food pantry intervention that emphasized client-choice found a decrease in food insecurity and an increase in self-efficacy with its program use,³⁷ two goals of the DFB program. In customers' pursuit of tailored food packages, and emphasis on food preference, they sought PBC, a key construct in the TPB. A DFB program could offer packages consisting of important foods, at an acceptable price that customers are willing to pay, and with a high measured value, but the missing element that hinders food acquisition through a DFB program could be customer choice. However, even with limited PBC, DFB programs ultimately increased the number of choices a low-income consumer had for acquiring food.

LIMITATIONS

During the period of sales data collection, several variables changed, including the contents and price of the mixed package and the offering of focused packages; therefore, this thesis represented a correlational study, as the implementation of the changes was unable to be controlled and explanations for

changes could not be causally attributed to specific variables. The non-random yet purposive sampling technique for the survey data, although it led to a high response rate, may not have been reflective of the entire sampling population; in addition, the population of this region of New York state may not have been reflective of the theoretical population, limiting the external validity of this study. Likewise, although it was a strength of this study to include both SNAP participants and those who did not qualify for SNAP but still struggle with food insecurity, this wider inclusion limited comparisons to existing evidence which often separated study participants by SNAP and non-SNAP. The lack of income data committed the measure of food assistance participation to act as a proxy measure for socioeconomic status. Lastly, the survey importance data may have been influenced by social norms through social desirability bias, as respondents may have aimed to respond to survey questions in a way that aligned with current health messaging. Nutritional messaging for low-income consumers has been consistent, emphasizing the importance of fruit and vegetables, and protein to some extent. Internalization of these messages may have manifested as indicating these items as very important on the survey. Thus, the large difference between the number of respondents who indicated protein, vegetables, and fruit as important or not important decreased the power to detect any differences in WTP between pairs of groups.

IMPLICATIONS

According to the results of this study, price was related to program sales whereas value was not. Future research on this program could observe sales beyond the first four months of the price change to see if and how customers adapt to the new price. Depending on the adaptation, one important implication for program operations could be to keep food package prices at or below an acceptable price threshold for customers, even if a higher price offers a better value.

Alternatively, if measures of value are less immediately apparent when offering combinations of food items as opposed to individual items, programs could make a marketing effort to advertise the discount or other value measures of the package to bypass the uncertainty of customers' value perceptions. To predict if marketing in this way would make a difference in sales, more research is needed to understand the relationship of value to other attitudes related to food acquisition. If food preference holds as the primary consideration of package purchase, then additional efforts to understand customer preferences may help inform food package creation.

One way to gain additional insight into preferences could be to explore the association between "discount" and "abundance" of packages and sales.

Discontinuity between specific item preferences and WTP for corresponding focused package types leads to questions about the attitudes toward contents importance and package types relative to one another, and these ideas could be

explored through survey questions that ask respondents to report relative WTP for a package with protein and produce compared to protein and pantry, as one example.

Additionally, this survey asked about personal preferences of the participant, but some research suggested preferences changed and priorities shifted when children were in the household.^{7,17} The number of children in the household may be an important demographic characteristic to consider when aiming to satisfy customer food preferences. Future study designs may also benefit from asking respondents to rank, instead of list, importance of certain food items and barriers relative to one another. These more specific data may be more informative of any interactions between importance and sales, and might help programs decide which items to emphasize or on which barriers to focus.

CONCLUSION

This study provided insight on the association among attitudes toward DFB packages, and the PBC of food acquisition through a DFB program. Receiving protein, vegetables, and fruit in food packages was important to almost all low-income consumers, and these preferences could be addressed by emphasizing these food items in mixed packages or offering them as focused packages. Additionally, price, but not value, was associated with sales, suggesting the focus of DFB

programs be not on maximizing value, but on minimizing price when building and offering packages of food. Lastly, before choosing to purchase a package with protein, vegetables, and/or fruit at an acceptable price, low-income consumers must first like or want the food being offered, and DFB programs need to understand the preferences of their potential customers. Together these data suggest that food preferences may be prioritized higher than other attitudes toward content, price, value, or barriers when making the decision to purchase a DFB package. Deepening understanding of attitudes, social norms, and PBC will help to dissect the process by which low-income consumers make food-purchasing decisions. These insights may prove valuable in informing food assistance programs that aim to decrease food insecurity, improve self-sufficiency, and get food into the hands of people who need it.

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CHAPTER 3

CONCLUSIONS

The Theory of Planned Behavior¹ organizes understanding of behavioral influences in a way that transforms the internal process of decision-making into measurable constructs that researchers can interpret. In exploring how individuals with low-income plan their food-purchasing behaviors, this study suggested that after baseline preferences for food are met, important foods and price, but not value, may be considered when choosing to participate in a DFB program.

When interpreting attitude toward DFB food package value, however, there may not be a shared definition between internal perceptions of low-income consumers and objective measures. Package value was measured in terms of discount, energy content, number of total servings, and number of protein servings, and none of these measures were predictors of sales. This lack of a relationship may suggest that the measured value in this study was incongruent with the perceived value by the customer. Although an average package may save the customer 43% on those particular groceries, the full worth of that discount may be perceived differently if not every single item in the package is desired. Saving money through a DFB program may not be the most efficient use of limited funds if other perceived values – such as liking, ability to satisfy hunger, acceptability to all household members, freshness and perishability, and knowledge and self-

efficacy surrounding each food item – are lower than the measured value. When considering the influence of attitudes, low-income consumers likely ask the aggregate question: “Is this food package worth it?”

According to this study, the answer to that aggregate question was strongly associated with price. When the price of the mixed food package increased by \$5.00, total sales fell by 20%. In part, food package prices had been raised to finance inclusion of higher quality foods, with the intention of increasing perceived value. According to the sales data, however, this particular value was misaligned with values as perceived by low-income consumers. Furthermore, the link between what customers report being willing to pay and what they actually are willing to pay may be another example of a discrepancy between observed attitudes and behavior, as past research has shown that hypothetical WTP is considerably higher than actual WTP,^{2,3} particularly when using a contingent valuation exercise to assess that outcome.⁴ Using price change and WTP data in conjunction with one another within the context of what is known about typical contingent valuation responses helps to explain the likely gap between attitudes and behavior.

Beyond consideration of attitudes when deciding if a package is worth the purchase, factors out of one’s control, such as time of year, may influence the decision to purchase a package. Although not an initial focus of the study, the seasonality of the package sales – with lower sales during the summer and higher

sales during the winter – became an interesting finding with program implications. Change in season may be accompanied by a change in PBC surrounding the various options for food acquisition. For example, produce availability increases during the summer months because produce tends to be sold at a lower price at grocery stores, and additional food assistance programs, such as various farmers' market nutrition programs, are activated for the summer. This increase in produce availability grants the consumer more options for food acquisition, and thus more PBC, potentially leading to a shift away from a restrictive program such as a DFB program, and toward an option with more choice. On the other hand, package sales increase during the winter months, a time when money is being spent on other priorities, such as utilities, and may not be available for food expenditure.⁵ This decrease in PBC may stimulate participation in a food assistance program. Desire to follow social norms at these two times of year also may be woven into the story of food purchase, as summer may emphasize fresh produce (as opposed to the canned or frozen produce a DFB program may often offer), and as winter may emphasize ensuring a plethora of food at the table during the holidays.

The culmination of attitudes, social norms, and PBC is difficult to disentangle, but a baseline understanding of factors influencing food purchasing decisions can help programs create and offer packages of great value, both measured and perceived. With such an accomplishment, DFB programs could be

an option for low-income consumers who either do not qualify for federal assistance or do qualify but choose not to receive said assistance. As people with low and very low food security struggle with issues such as running out of food at the end of the month or not being able to afford balanced meals, DFB programs can help to alleviate some of those reported issues by offering mixed packages of food with a variety of important food items, including protein, vegetables, and fruit.

DFB programs would need to operate at a much larger scale to have an impact on food insecurity at a national, state, or even local level. Limitations relating to logistics would most likely be the largest barrier to expansion, as the success of the smaller scale program relies heavily on volunteers who build the food packages, organize the orders, and distribute the food. As a result of large-scale program expansion, relationships between food banks and larger food retailers, who may also serve as an integral part of the emergency food supply chain, may occur. If a food bank food distribution program scales up to the degree where it is viewed as a competitor to local retailers, agreements regarding donations and partnerships have the potential to deteriorate, ultimately affecting the food environment through which low-income consumers must navigate to acquire food.

Given these limitations to substantial growth of DFB programs, any food acquisition option that addresses specific symptoms of low and very low food security may be a useful addition to the variety of public and private efforts that exist to eliminate food insecurity. Ultimately, DFB programs may be too restrictive for people aiming to satisfy their personal attitudes toward content importance and value, align with society's norms, and maintain behavioral control in their food acquisition. However, understanding how low-income consumers make food-purchasing decisions is an important step in designing distribution systems that do meet the needs and values of this consumer base. If those needs can be successfully addressed, discounted packages of food as a consistently available option when financial strain is present may help shift the landscape for people trapped in a state of uncertainty about food acquisition to a more stable way of living. This shift may ultimately empower people to reach a state of increased self-sufficiency around food, improved food security, and subsequently, better health outcomes and an improved quality of life.

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APPENDIX

Appendix 1: Survey Instrument

Discount Food Buying Program Survey

The DFB program sells boxes of food each month to help people stretch their food dollars.

1) Before now, had you heard of the DFB program?

- Yes No Unsure

2) If yes, how did you hear about the DFB program?

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> My local food pantry or soup kitchen
<input type="checkbox"/> Food Bank employee
<input type="checkbox"/> Flyer or postcard | <input type="checkbox"/> Word of mouth
<input type="checkbox"/> I have not heard about the program before now
<input type="checkbox"/> Other: _____ |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

3) In the past year, how often did you purchase a DFB food package? (choose one)

- 9 or more times 5-8 times 1-4 times 0 times

3b) If you have not ever purchased a DFB food package, would you be interested in learning more about the DFB program? Yes No

Whether or not you have ever purchased a DFB food package, please answer the following questions about your food preferences.

4) If/when purchasing a food package, how important is it to you to get EACH type of food item: very important, important, somewhat important, not important? Think about each food item individually without comparing it to other foods while answering this question.

Food Item	Very Important	Important	Somewhat Important	Not Important
Fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meat/Poultry/Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cheese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cereal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pasta/Rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5) In considering the purchase of a DFB food package, how important would each of the following be?

I want the foods in my DFB food package to be...

Food Trait	Very Important	Important	Somewhat Important	Not Important
Easy to prepare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staple items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tastes good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutritious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Familiar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Varied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6) In considering the purchase of a DFB food package, which of the packages and prices below would you be willing to pay? Check all that apply.

Contents	\$5.50	\$10.50	\$15.50	\$20.50	\$25.50
Protein Box: 4-6 meat/protein items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pantry Box: 8-10 staple items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produce Box: 5-7 produce items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Combined Box: 12-15 items, varied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7) In a given month, what are the reasons that you might not purchase a DFB food package? Check all that apply.

- I don't need the food/I get my food from other sources
- I don't want the foods offered that month
- It's too expensive
- I don't want to prepay
- I forget to order
- The ordering system is complicated
- I don't have transportation to the pickup site
- I don't have enough SNAP benefits to spend on a package
- I have difficulty carrying the food home
- I am uncomfortable using the program
- I am not eligible for the program
- Other: _____

8) If you have purchased a DFB package today or in the past, how would you rate the DFB program in providing these types of foods: excellent, good, fair, poor?

Food Trait	Excellent	Good	Fair	Poor
Easy to prepare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staple items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tastes good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutritious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Familiar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Varied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9) Do you (or anyone in your household) participate in...(check all that apply)

- Supplemental Nutrition Assistance Program (SNAP, previously Food Stamps)
- Food pantries
- Soup Kitchens
- Senior centers that serve lunch
- Home delivered meals or Meals-on-Wheels
- The WIC program (Women, Infants, and Children)
- Free or Reduced School lunch programs
- Free or reduced School breakfast programs
- After school snack programs
- Child care food programs such as free or low price meals at child care centers
- Summer food programs providing free lunches for children
- None of the above

10) Are you:

- Male
- Female

11) What is your age?

- 18-34 years
- 35-64 years
- 65 or more years
- Rather not say

12) Which of these categories best describes you currently? (Mark only one)

- Employed full time for pay
- Employed part time for pay
- Unemployed
- Retired
- Rather not say

13) How many people live in your household, including yourself?

- 1 person
- 2-4 people
- 5 or more people

14) Which of the following groups best describes you? (Mark all that apply)

- Caucasian or White
- Asian
- American Indian or Native American
- Black or African American
- Hispanic or Latino
- Other: _____
- Rather not say

15) Please share any additional thoughts, comments, and suggestions you have for the DFB program.
