

Filling the gap: The role of food pantries for income-constrained adults

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Abstract

This paper examines cyclical patterns of food pantry utilization among Social Security Retirement beneficiaries to understand how public and charitable food assistance jointly support older adults. I use novel administrative data from a regional food bank, capturing household-level pantry visits across twenty counties. Leveraging quasi-random variation in Social Security check distribution timing, I find a small increase in food pantry utilization in week three of the pay cycle for retirement-aged households. This response intensifies during longer pay cycles, where pantry visits spike by 7.7% in the final week and remain elevated into the first week of the next pay cycle. These findings show that charitable resources support older adults throughout the Social Security income cycle, particularly during five-week pay periods when the gap between checks is most severe.

JEL Codes: H41, I14

1 Introduction

In the United States, adults over 65 are a rapidly increasing population, and the number of older adults is projected to increase from 40.3 million in 2010 to 85.7 million in 2050 (Vespa, Engelberg, and He 2020). This demographic shift brings the financial challenges that older adults face into focus; nearly 10% of adults over 60 are food insecure (Heflin and Meyer 2025). However, take-up of the Supplemental Nutrition Assistance Program (SNAP) among eligible seniors is remarkably low at only 48%, compared to 82% of all eligible adults (Leftin, Keith, and Dalaker 2023). Additionally, many low-income, older households rely exclusively on Social Security as their primary income, causing them to face tradeoffs between food, housing, and medical expenses (Heflin and Meyer 2025). The severity of these trade-offs is evidenced by the fact that the rate of homelessness among older adults is increasing faster than any other age group (U.S. Government Accountability Office 2025). While households may forgo food to keep a roof over their head, nutritional deprioritization can have serious health consequences for older adults, including higher rates of diabetes, heart attacks or heart failure, depression, and limitations of activities of daily living (Ziliak and Gundersen 2014).

Relying on monthly Social Security transfers introduces a secondary challenge: payday cycles. Researchers consistently find that low-income recipients of government cash transfers reduce their consumption as they near the end of the benefits cycle (Olafsson and Pagel 2018; Shapiro 2005; Todd 2015; Wilde and Ranney 2000), but much less is known about whether these households rely on charitable resources to fill the gap between paychecks. Feeding America, the largest hunger-relief organization in the United States, estimates more than 50 million people used charitable food assistance in 2023 (Feeding America 2024), more than the total number of individuals served by SNAP (United States Department of Agriculture 2023). Food pantries are likely a valuable source of food for low-income households facing cyclical financial stress, but only a few studies explore the relationship between government assistance and charitable food assistance (Byrne and Just 2021; Martinez-Miller, Leonard, and Pruitt 2022).

This paper leverages the institutional timing of Social Security retirement payments to provide causal evidence on how predictable Social Security retirement income timing shapes food pantry utilization among older adults. Using the quasi-random variation in Social Security retirement payment dates alongside novel, administrative data from a regional food bank, I identify changes in food pantry utilization across the payment cycle. Social Security retirement beneficiaries receive their monthly paycheck according to the day of the month that they were born. For example, beneficiaries born on the first through the tenth receive their check on the second Wednesday of the month, while beneficiaries born on the 11th through the 20th receive their check on the third Wednesday. This schedule creates quasi-random variation in check receipt across retirees (Gross, Layton, and Prinz 2022; Stephens Jr 2003). Further, the Social Security retirement payment schedule creates predictable

variation in the length of pay cycles. Because payments are made on Wednesdays, benefits are typically received 28 days apart, but the cycle extends to 35 days for about one third of the year in months with five Wednesdays. I use this variation to assess how individuals respond to financial strain driven by longer pay periods.

I find that, in general, retirement-age adults use charitable food assistance more frequently than adults under 50. Among customers who visited a pantry or community meal site at least twice during the sample period, older adults visited the pantry almost monthly, with a predicted probability of visiting of about 16-17% in any given week. Adults under 50 visited just over half as frequently, with a predicted probability of visiting a pantry or community meal site of about 10%.

Food site visits among retirement-age adults increase by 1% over the baseline visit probability in week three of their pay cycle, or two weeks after they received their Social Security retirement check. This suggests that reliance on food pantries during a Social Security pay cycle is modest on average. However, pantry utilization is heavily dependent on the duration of the payment cycle. In an extended, 35-day cycle, pantry visits spike by 7.7% in the fifth week and remain elevated by 4.6% into the next benefit cycle. These results suggest that while older adults may successfully navigate a four-week budget, a five-week cycle induces additional financial stress among this population, leading them to turn to the charitable sector to make ends meet.

This work contributes to the existing literature on the relationship between consumption and income timing. Researchers offer two primary explanations for reductions in consumption toward the end of a payment cycle. Shapiro (2005) suggests behavior is consistent with quasi-hyperbolic discounting, where households over-consume in the beginning of the month, creating end-of month shortfalls. Alternative theories suggest that spending cycles reflect binding income constraints rather than self-control problems (Todd 2015; Olafsson and Pagel 2018). Regardless of the underlying mechanism, restricting food consumption due to resource exhaustion can have disastrous consequences. Basu, Berkowitz, and Seligman (2017) documents a 27% increase in hospital admissions for hypoglycemia as SNAP benefits run out. Other research links the end of the benefit cycle to spikes in emergency room visits, crime, and poor academic outcomes (Cotti, Gordanier, and Ozturk 2020; Evans and Moore 2011; Carr and Packham 2019). This paper focuses on how households cope with end-of-cycle shortfalls when resources are exhausted. By documenting the systematic shift toward food pantries within the payment cycle, I show that the charitable sector serves as a buffer that absorbs the shocks created by the timing of Social Security retirement transfers.

Additional literature evaluates the effect of public assistance on food security, finding that becoming a Social Security or Medicare beneficiary increases food security (Brucker, Jajtner, and Mitra 2022; Martinez-Miller, Leonard, and Pruitt 2022). However, like SNAP benefits, Social Security checks are distributed once a month, and research finds increases in consumption related to Social Security check distribution (Stephens Jr 2003). Consistent with the SNAP food cycle literature, Mastrobuoni

and Weinberg (2009) finds a decrease in calorie consumption the week before check receipt for Social Security beneficiaries without savings, suggesting that low-income, retirement-aged adults may also time their food consumption along with income. Gross, Layton, and Prinz (2022) take the reverse approach and find that prescription refills increase by 6 to 12 percent when Social Security checks are distributed, showing that older adults delay filling prescriptions until they receive their income. Given the evidence of lower SNAP take-up among the retirement-aged population alongside evidence of consumption cycles with Social Security retirement income, it is plausible that older adults rely on alternative methods, like charitable food, to close the gap.

This paper also contributes to the literature on the role of private, charitable food assistance in the food assistance system, particularly for older adults. Although public food assistance, such as SNAP, the Special Supplemental Nutrition Assistance Program for Women, Infants and Children (WIC), or the National School Lunch Program (NSLP), garners much of the academic attention, private, charitable food assistance, such as food pantries, serve a large share of needy families as well. Unlike public programs, much of the charitable food assistance sector suffers from a lack of consistent, administrative data, making it difficult to study. Charitable food assistance is often made up of a network of organizations ranging from small, all-volunteer groups to large-scale distribution centers, and many of these organizations do not have the technology or capacity to document program utilization. My paper makes use of administrative data collected by a food bank that serves over 700 different pantries and other organizations, making it one of the first large-scale, causal studies of cyclical utilization behavior in the charitable sector.

This paper proceeds as follows: Section 2 discusses income sources for older adults and the institutional details of Social Security eligibility, along with public and private food assistance available to low-income retirees. Section 3 introduces the administrative data and the institutional setting of the food bank studied in this paper, followed by descriptive statistics that characterize the study population. Section 4 describes the empirical strategy and estimates when older adults visit the food pantry relative to when they likely receive their Social Security retirement check. Section 5 discusses the implications of the results and policy recommendations.

2 Background

2.1 Income Sources for Older Adults

As adults reach retirement age, income sources shift from earned income through wages and salaries to retirement savings, pensions, and Social Security. Employment declines as adults age, though the older adult workforce has grown in recent years. According to Fry and Braga (2023), one in five adults over 65 are employed. Workers who continue working past retirement age tend to have more

education than those who retire earlier (Burtless 2013), and almost half of retirees (46%) say they retired due to health problems, caregiving duties, or an inability to find work. These “involuntary” retirements are concentrated among households with lower education levels (Board of Governors of the Federal Reserve System 2024), suggesting that households who enter retirement earlier may face more limited financial flexibility.

Nearly all adults over 65 receive Social Security Retirement and Survivors Benefits or Social Security Disability Insurance (SSDI), as shown in Table 1. Like Social Security retirement, SSDI is a federal program that provides monthly income to workers who paid into Social Security through their taxes; however SSDI is available to individuals who developed a long-term disability that prohibits them from working. SSDI is distributed on the same schedule as Social Security retirement. If an individual qualifies, SSDI benefits are approximately equal to Social Security retirement benefits at full retirement age (FRA), whereas claiming retirement benefits before FRA results in permanently reduced payments (Scott et al. 2023). This creates an incentive to apply for SSDI rather than retire early if a worker has a work-limiting impairment and was insured by SSDI at the time of the disability. After an individual reaches full-retirement age, all Social Security benefits are transitioned to Social Security retirement. For my analysis, I focus on the sample of individuals who are at or above FRA to distinguish the effects of Social Security retirement and SSDI.

Although individuals can begin collecting Social Security retirement benefits at age 62, FRA can be between 66 and 67 depending on birth cohort. Benefits are calculated based on a worker’s 35 highest-earning years of employment, indexed for inflation. Years with zero earnings, potentially from shorter or interrupted work histories, are averaged into this calculation, often resulting in lower monthly disbursements (Huston 2026). If an adult were to retire at age 65 after a full career of average earnings, they would receive roughly 37% of their pre-retirement income, while those who retire earlier than FRA receive about 30% smaller benefits for life (Heflin and Meyer 2025). Because lower-income households have lower lifetime earnings and often retire earlier due to health or labor market constraints, they are more likely to rely on relatively smaller, fixed payments.

At the same time, Social Security benefits often constitute a large share, or even the majority, of total income for low-income households, suggesting that lower-income retirees may rely heavily on a relatively modest stream of Social Security payments. According to the Social Security Administration (2022) 37% of men and 42% of women over 65 rely on Social Security for more than half of their income. Social Security retirement benefits are the sole source of income for 27% of adults (DeSilver 2025). Among retirees who rely exclusively on Social Security or other government transfers, only 52% reported that they were doing “financially okay” compared to 95% of retirees who had other sources of retirement income. Social Security also plays a crucial role in poverty prevention: without these benefits, 37.3% of adults over 65 would fall below the federal poverty line; with benefits included, only 10.1% fall below the federal poverty line (Romig 2025).

Table 1: Sources of Income Among Retirees (by age)

Income Source	% Retirees Age 65+	% All Retirees
Social Security (including Old-Age and DI)	92	77
Pension	64	56
Interest, dividends, or rental income	52	48
Wages, salaries, or self-employment	26	33
Cash transfers, other than Social Security	5	8

Respondents could report multiple income sources.

Source: Federal Reserve (2023), Table 36.

While individual Social Security receipt is not directly observed in this paper, I use age as proxy for program participation. The data used in the paper comes from a large food bank in Central Ohio, the Mid Ohio Food Collective (MOFC), which requires all customers earn below 200% of the federal poverty line in order to use their services. Therefore, the customers in the sample are likely to have limited alternative sources of income and to rely heavily on Social Security as a primary income source based on the patterns described above.

Social Security benefits are distributed on a staggered monthly schedule determined by the beneficiary’s date of birth, providing a plausibly exogenous source of variation and allowing me to isolate the causal effect of income arrival on the timing of food pantry visits. Individuals born on the 1st through the 10th receive payments on the second Wednesday of the month, those born on the 11th through the 20th receive payments on the third Wednesday, and those born on the 21st through the 31st receive payments on the fourth Wednesday. Because birth dates are exogenous to other household characteristics or food pantry operating hours, this schedule provides a quasi-experimental source of variation in the timing of Social Security paycheck receipt. This allows me to isolate the effect of income arrival on the timing of food pantry visits, effectively controlling for within-month factors, like the distribution of SNAP benefits, that might otherwise confound the relationship between income and demand for charitable food.

2.2 Food assistance and older adults

Older adults facing food insecurity may turn to public or private food assistance to meet their needs. Public programs, such as SNAP, provide benefits through an Electronic Benefit Transfer (EBT) card that can be used like cash to purchase eligible food from authorized retailers. However, SNAP participation among older adults remains relatively low despite high rates of eligibility. The SNAP application process can be time-consuming and invasive, requiring documentation of need,

interviews, and periodic recertification, which may be particularly burdensome for older adults with limited technology access or mobility constraints (Herd and Moynihan 2019; Heflin and Meyer 2025). Survey evidence suggests older adults are discouraged from SNAP participation by uncertainty about their eligibility or by the application process, especially as states increasingly rely on online-only application systems (AARP Foundation 2021). In addition, the expected benefits from the program for older adults may be low; many eligible adults only qualify for the minimum level of benefits, around \$20 per month, reducing the perceived returns to participation.

Private food assistance offers an alternative source of nutritional support. Food banks and food pantries are the primary source of private food assistance in the United States (Byrne and Just 2022). Food banks are typically nonprofit organizations that operate a large-scale warehouse designed to collect, store, and distribute food to a network of food pantries. Food pantries, which may be independent nonprofit or religious organizations, distribute the food directly to households, free of charge.

Compared to public programs, visiting a pantry usually involves fewer administrative costs. While income eligibility for charitable food assistance is set at the state level, with some states allowing thresholds as high as 300% of the federal poverty line, Ohio utilizes a "self-declaration" model. Under this policy, charitable providers are prohibited from requiring formal proof of income; instead, households provide a signed statement attesting that their income falls at or below 200% of the federal poverty line.

However, the level of food benefits customers receive from visiting a pantry varies from pantry-to-pantry. Some pantries large-scale, grocery-style organizations with a staff and an emphasis on customer choice. Others may be small, volunteer-based organizations offering pre-packed boxes of food. To balance high-demand and limited supply, organizations impose restrictions on service eligibility or visit frequency, including geographic service areas, monthly visit limits, or limited hours of operation. Many food pantries also report that customers must wait in line in order to receive food, which may impose significant time costs (Gose 2023).

Additional sources of charitable food include programs like community meal programs (also called soup kitchens), Meals on Wheels, and other charitable food providers. In particular, community meal sites offer ready-to-eat meals that visitors either consume on-site or can take home. Some community meal sites focus on older adults, providing them with nutritious meals and socialization. Another option for seniors includes the Commodity Supplemental Food Program (CSFP), which provides a box of food products for adults over 60 from the United States Department of Agriculture (USDA). CSFP boxes are distributed through charitable partner organizations and can include items like juice, dried fruit, canned vegetables and meat, cheese, pasta, and cereal (U.S. Department of Agriculture, Food and Nutrition Service 2025a).

Together, these institutional features suggest that older adults may face tradeoffs between public

and private food assistance. SNAP provides flexible purchasing power but requires navigating time-consuming and invasive administrative procedures, while food pantries offer quick access to food but with limited choice and constrained visit frequency. Older adults may be particularly sensitive to the administrative burdens of public programs, including technological barriers. As a result, when fixed incomes are insufficient to meet food needs over the month, older adults may rely on food pantries and other charitable food sources to supplement their consumption and avoid nutritional deficiencies.

3 Data and Descriptive Statistics

MOFC distributes charitable food to a network of over 700 partner agencies across twenty counties, covering both rural and urban areas. These agencies include food pantries, community meal sites, daycares, and other organizations. MOFC also developed a client management system to track pantry utilization across its service area. Upon visiting a charitable food site for the first time in the region, customers input their personal information, including their address, household size, and birth date. Both the customer and their household are assigned unique identifiers, allowing subsequent visits to any pantry within the network to be linked to the same individual and household. Customers can update their information on later visits to ensure accuracy.

The data capture details about each visit to a food pantry or community meal site, including the date of the visit and the location of the pantry. Crucially, the data also include the birth year and the day-of-month a customer was born, allowing me to determine the likely Social Security check payment schedule for age-eligible customers who receive retired-worker Social Security benefits based on their own work history. Approximately 87% of Social Security Retirement beneficiaries receive payments in this way, meaning their checks are distributed according to their day of birth (Social Security Administration 2024). A smaller share of beneficiaries receive spousal or survivors benefits; these beneficiaries' payments are distributed based on the workers date of birth, rather than the birth date of the spouse or survivor. Assigning a pay date based on the food pantry customers day-of-birth likely captures the true Social Security payment date for most of the customers in the sample.

The analysis focuses on all individuals who are at or above full-retirement age, which ranges from 66 to 67 based on birth year. I choose to focus on the full-retirement age, rather than the initial retirement age of 62, to distinguish the effects of Social Security retirement and SSDI. SSDI is distributed on the same schedule as Social Security Retirement, and individuals aged 62–66 could include a mix of early retirees and SSDI beneficiaries. If an individual qualifies, SSDI benefits are approximately equal to Social Security retirement benefits at FRA, whereas claiming retirement benefits before FRA results in permanently reduced payments (Scott et al. 2023). This creates an incentive to apply for SSDI rather than retire early if a worker has a work-limiting impairment and was insured by SSDI at the time of the disability. After an individual reaches full-retirement age, all Social Security benefits are

transitioned to Social Security retirement. Additionally, Medicare eligibility begins at age 65 and has been shown to increase food pantry utilization (Martinez-Miller, Leonard, and Pruitt 2022). Focusing on customers at or above FRA more cleanly isolates the effect of Social Security retirement check distribution from other government programs.

The sample excludes just under 9,000 full-retirement age individuals who only visited a charitable food site once. Single-visit customers may appear in the data following an isolated emergency or shock and therefore their visit may not reflect ongoing reliance on charitable food assistance. My estimation strategy leverages the within-person variation in pantry use at different points in the pay cycle. Because beneficiaries receive checks according to a quasi-random and staggered benefits schedule, this empirical design isolates how income timing affects charitable food use to determine when a customer is most likely to visit the pantry within their pay cycle.¹

The sample period spans 2018 and 2023, which is when the client management system was in use by all of MOFC's partner organizations. A customer enters the sample at their earliest recorded visit, which could be prior to 2018 if the customer visited a charitable food site that implemented the client-management system prior to 2018. Customers exit after their final visit during the sample time frame, creating an unbalanced panel. Customers only appear in the administrative data once they interact with a pantry or meal provider in the MOFC network, and there is no information on individuals prior to their first recorded visit. Restricting the panel to observed periods avoids making assumptions about the customer's pantry use before or after the recorded visits, including potential visits outside of the twenty Ohio counties served by MOFC. This restriction also ensures that identification relies on within-person variation in timing relative to Social Security payment cycles rather than differences across individuals. Altogether, I identify 45,737 customers at or above FRA who used charitable food services at least twice between 2018 and 2023.

Table 2 presents summary statistics about food pantry customers at or above FRA. Retirement-aged customers exhibit patterns that suggest systematic reliance on the charitable food system, indicative of insufficient incomes to meet nutritional needs through non-charitable services. On average, these customers begin using the pantry at age 69, live roughly 5.5 miles from their chosen pantry, and participate for multiple years, with an average of 35 total visits over the 2018–2023 period. Most households contain two individuals, and the majority of customers are female. Annual visit frequency averages nearly 12 times per year, or roughly once per month. In contrast, adults between the ages of 18 and 50 who use the pantry at least twice visit less frequently, around 7–8 times per year. This suggests that for the retirement-aged population, the pantry is not merely an emergency resource but a predictable component of the monthly budget. Older customers also exhibit longer periods of engagement: the mean time between first and last observed visits is 171.1 weeks (3.3 years) for

¹I drop individuals with birthdays reported on the first of the month because birthday assignment defaults to the first of the month for individuals with an unknown birthday.

Table 2: Customer Summary Statistics

	Mean	Standard deviation
<i>Panel A. Overview</i>		
Average age at first visit	69.1	7.2
Distance traveled (one-way, miles)	5.5	5.6
Average annual visits	11.6	14.9
<i>Panel B. Gender (%)</i>		
Male	31.7	
Female	64.4	
<i>Panel C. Household size</i>		
Total	2.0	1.5
Children	0.3	0.6
Seniors	1.2	0.5
Adults	0.6	0.9
Observations	45,737	

Notes: This table reports summary statistics on full-retirement age food pantry customers who used a food pantry in the Mid-Ohio Food Collective network between 2018 and 2023. Note that Male and Female do not add up to 100 percent as some pantry customers either did not report a gender or reported ‘Other.’ Distance traveled is the average, Euclidean distance from customer’s home location to the pantry they visited. Components may not sum to total due to rounding. (Source: author’s calculations using MOFC food pantry utilization data.)

retirement-aged adults versus 148.1 weeks (2.8 years) for adults under 50. Collectively, these patterns indicate that older adults rely more chronically on pantry resources, highlighting a population for whom charitable food assistance plays a central, ongoing role in meeting basic nutritional needs.

One potential barrier to studying cycles in food pantry usage is that charitable food organizations are open for more limited hours than typical retail establishments. Some pantries may only be open once or twice a month, preventing customers from freely choosing when to visit a pantry. If a customer’s visit always occurs within the same week because of the charity’s schedule, rather than in response to income timing, that behavior does not contribute to identification in my design.

Because some pantries limit the number of visits customers can make, one concern is that customers may not be able to visit the pantry as often as they would like. There are several pantries and community meal sites in the data that are open frequently and for extended hours. Customers are also able to visit multiple pantries in the network if needed. Therefore, for many customers, I observe actual demand for charitable services rather than an upper bound of constrained access.² To account for the fact that

²The quantity of food taken at each organization may also be limited. The food bank estimates that the demand for food is three to four times larger than what it currently provides.

charitable food sites are open less frequently than other retail establishments, I create a weekly panel with a binary indicator for whether a household visited a charitable food site at least once within the week.³

It is also worth noting additional benefits or payday distribution dates in Ohio to understand other cycles that may influence food pantry utilization. SNAP benefits in the state are distributed according to an individual’s case number, which is assigned randomly. Benefits are distributed every other day, typically between the first and the twentieth of the month (U.S. Department of Agriculture, Food and Nutrition Service 2025b). Supplemental Security Income (SSI) benefits are distributed on the first Wednesday of the month. Because SSI and Social Security payments fall on different Wednesdays, my birth-date-based identification specifically isolates the latter. Additionally, since 2019, Ohio law mandates a semi-monthly pay cycle, requiring employers to distribute paychecks at least twice each month, typically by the first and the fifteenth (Ohio Revised Code 2025).

While the data do not include individual-level information on participation in SNAP, SSI, or other wage receipt, these payment schedules differ from the Social Security schedule in that they are either spread throughout the month or concentrated at fixed calendar dates rather than staggered by birth date. As a result, they are less likely to generate the same variation in timing over the pay cycle that identifies the effects of Social Security income in this analysis.

4 Methods and Results

My identification strategy follows Gross, Layton, and Prinz (2022) and relies on variation in time since Social Security payment receipt. Because payment timing is fixed and plausibly unrelated to short-run fluctuations in food need, variation in time since payment provides exogenous changes in available resources over the payment cycle. Using the birth date of each customer who is at or above full-retirement-age, I assign individuals to their corresponding Social Security pay week and construct event time relative to payment. I then estimate a linear probability model to measure how the likelihood of visiting a food pantry evolves over the payment cycle.

To understand the dynamics of food pantry visits among retirement-aged adults, I rely on the following specification:

$$y_{it} = \alpha_i + \sum_{w=2}^5 \beta_w \mathbf{1}\{week_{it} = w\} + \gamma_t + \varepsilon_{it}, \quad (1)$$

where y_{it} is an indicator equal to one if customer i visited any pantry in week t , and $\mathbf{1}\{week_{it} = w\}$

³Although my analysis includes all visits to pantries and meal sites, including food pantry visits, CSFP pickup, and community meals, food pantry visits make up a majority of visit types. I observe over 5 million visit-weeks between 2018 and 2023, and only 1% of the visits are either CSFP pickup or community meal site visits.

is a dummy variable for the week within the Social Security pay cycle, with week one defined as the week in which the retiree receives their benefit. The coefficients β_w capture changes in the probability of a pantry visit relative to week two, the first full week following benefit receipt. Because benefit payments are typically deposited midweek, week two provides a cleaner reference period that reflects behavior after income receipt rather than a mixture of pre- and post-payment days. The specification includes individual fixed effects, α_i , and year-week fixed effects, γ_t . The error term, ε_{it} , captures idiosyncratic shocks to pantry visits.⁴

Table 3: Change in the Probability of Visiting a Food Pantry over the Social Security Pay Cycle

	(1)	(2)	(3)	(4)
	FRA Adults	Single & FRA	Adults under 50	Chronic users
Week 1 (paycheck week)	0.08 (0.08)	0.16 (0.13)	0.02 (0.02)	0.11 (0.09)
Week 3	0.17** (0.07)	0.25** (0.12)	0.05** (0.02)	0.20** (0.09)
Week 4	0.13 (0.08)	0.19 (0.13)	0.01 (0.02)	0.15 (0.09)
Week 5	0.03 (0.11)	0.13 (0.18)	0.00 (0.03)	0.03 (0.13)
Observations	6,716,249	2,787,564	21,952,863	5,686,172
Individuals	45,737	19,559	159,154	35,079
Baseline predicted probability	16.6%	15.5%	9.7%	19.1%

Notes: This table reports linear probability model estimates of weekly food pantry visits. Week indicators are relative to the Social Security pay cycle, with week two (first full week after benefit receipt) as the omitted category. Baseline predicted probability reports the predicted probability of visiting in week two. The estimates are shown as percentage points changes ($\beta_w \times 100$). Standard errors clustered at the individual level are in parentheses. ** $p < 0.05$, * $p < 0.10$. FRA stands for "full-retirement-age." Chronic users are customers whose total number of visits is at or above the sample median of five visits between 2018 and 2023.

Column (1) of Table 3 reports the estimates of Equation (1) for individuals who are at or above FRA. Relative to the first full week after receiving a paycheck (week two), there is a small increase in the probability of using a food pantry toward the middle of the pay cycle in week three (0.17 percentage points) corresponding to an approximate 1% increase relative to the baseline weekly visit probability of 16.6%. Estimates for weeks four and five are positive but smaller in magnitude and not

⁴I also test nonlinear binary response models. The results do not vary substantially.

statistically different from zero. There is no evidence of elevated pantry use in the check week itself (week one), consistent with week two capturing post-payment behavior. While these estimates are small, they represent average visit changes across all pay cycles, and may mask heterogeneity driven by differences in the length of pay cycle.

Because of the random-assignment of paycheck distribution days, the estimates identify the causal relationship between predictable retirement income and food pantry utilization. However, many of these households include multiple earners, meaning that the Social Security Retirement check may be one of several income sources. If these other incomes arrive on different days or if the primary pantry visitor is not the main earner, the observed patterns may reflect the combined timing of household resources rather than Social Security alone, biasing the estimates toward zero.

To better isolate the effect of income timing on food pantry utilization, I restrict the sample to food pantry customers in single-customer-households, and I report the results in Column 2 of Table 3. Similar to the full sample, there is a small increase in the probability of using a food pantry in week three among single retirement-aged individuals. As expected, the magnitude of the effect is larger at 0.25 percentage points, or a 1.6% increase over the baseline weekly visit probability of 15.5%, consistent with food pantries playing a more central role in household resources among single retirees.

As a placebo test, I report estimates for customers aged 50 or younger in Column 3. I assign a pay week using the same schedule applied to Social Security Retirement beneficiaries; because adults under 50 are ineligible for Social Security Retirement benefits, any variation in pantry visits by week should be unrelated to retirement-based income. SSDI beneficiaries skew older, with more than three quarters over age 50, so focusing on customers under 50 reduces, though does not fully eliminate, the likelihood that individuals in the comparison group experience the same payment timing. At the same time, SSDI does not fully replace income, making it plausible that beneficiaries rely on charitable food services and may be overrepresented among pantry customers. While nationally representative data on SSDI recipients' use of food pantries do not exist, a survey conducted by MOFC of just over 19,000 customers, or about 1% of their total customer base, found that 5.2% reported "Disabled or in poor health" as their employment status. This survey evidence suggests that the number of customers under 50 who receive SSDI is small, but nonzero.

Among the under-50 group, the income response is small and not statistically distinguishable from zero in most weeks. The only increase occurs in week three, representing a 0.5% increase over the baseline weekly visit probability, plausibly related to SSDI distribution. Notably, the baseline visit probability for adults under 50 is 5-6 percentage points lower than the baseline visit probability for retirees, reinforcing the descriptive patterns observed in Table 2 and suggesting that retirees have a higher likelihood of visiting the pantry in any week.

Finally, I test the population of chronic food pantry customers who are at or above full-retirement age. I define chronic customers as customers whose total number of visits is at or above the sample

median of five visits between 2018 and 2023.⁵ The expected effect of Social Security Retirement check distribution on this group is ambiguous. On one hand, these customers rely heavily on food pantries, and therefore their visit timing may be regular and unaffected by income. On the other hand, their chronic utilization may reflect insufficient income, in which case they could be caught in a cycle of frequent pantry use to fill the gap between paychecks.

Chronic customers exhibit the same increase in utilization in week three of the pay cycle, though the magnitude of the effect represents a 1.0% increase over the baseline level of visits, or about the same effect observed for all retirees. This finding suggests that even among individuals with persistent food assistance needs, pantry utilization responds systematically to the timing of retirement income.

4.1 Changes in the weekly number of pantry visits

The results so far demonstrate how Social Security Retirement income distribution impacts the use of charitable food on the extensive margin. I also test how income timing effects utilization on the intensive margin, or the number of visits a customer makes each week, since customers may increase their total number of visits to ensure they have enough food as they await their next check.

To test the effect of income timing on the weekly count of pantry visits, I use the following, Poisson specification:

$$\mathbb{E}[y_{it} | X] = \exp\left(\alpha_i + \sum_{w=2}^5 \beta_w \mathbf{1}\{week_{it} = w\} + \gamma_t\right), \quad (2)$$

where y_{it} is the total number of pantry visits made by customer i in week t . Similar to the linear probability model, $\mathbf{1}\{week_{it} = w\}$ is a dummy variable for the week within the Social Security pay cycle, α_i are individual fixed-effects, and γ_t are year-week fixed effects. The coefficients, β_w , measure proportional changes in the expected number of pantry visits relative to week two of the pay cycle.

On average, retirees visit the pantry 0.20 (SD 0.52) times per week, meaning they visit the pantry around once per month. The results of Equation (2) show a 0.88% increase in the expected number of visits in week three of the pay cycle, which is statistically different from zero. This finding indicates that customers increase the expected number of pantry visits during the same week they increase pantry utilization. Together, these results point to small shifts in pantry utilization at both the intensive and extensive margins related to Social Security Retirement income receipt.

⁵Note that because the data only include visits between 2018 and 2023, the data are censored. Therefore, “chronic customers” are crudely defined, since I am more likely to observe visits from a customer who began visiting in 2018 rather than 2023.

Table 4: Total Food Pantry Visits by Week over the Social Security Pay Cycle (Poisson)

	(1) Weekly visit count
Week 1 (paycheck week)	0.46% (0.49%)
Week 3	0.88%* (0.49%)
Week 4	0.76% (0.53%)
Week 5	-0.01% (0.68%)
Observations	6,716,228
Individuals	45,716

Notes: This table reports the results from a Poisson fixed-effects model, expressed as percent changes ($\beta_w \times 100$) in the expected number of weekly food pantry visits relative to week two (the first full week after Social Security benefit receipt). Standard errors, clustered at the individual level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$.

4.2 Utilization in 28- vs. 35-day cycles

In addition to quasi-random variation in paycheck receipt, the Social Security retirement pay schedule generates variation in the length of time between payments. Most months include four Wednesdays, meaning that payments occur 28 days apart. However, months with 31 days that begin on a Wednesday, Thursday or Friday have five Wednesdays, and therefore roughly one-third of paychecks are received after a 35-day gap. Appendix Table 1 shows the months with five Wednesdays each year in the sample period. These longer intervals may exacerbate end-of-cycle resource constraints, increasing reliance on charitable food assistance in these periods.

Following Gross, Layton, and Prinz (2022), I use the irregular spacing of Social Security payments to determine how longer gaps between check arrivals affect pantry visit frequency. Specifically, I use a linear probability model to test whether older adults are more likely to rely on food pantries during 35-day pay cycles compared with standard 28-day cycles.

$$y_{it} = \alpha_i + \sum_{w=2}^5 \beta_w \mathbf{1}\{week_{it} = w\} + \sum_{w=2}^5 \delta_w \mathbf{1}\{week_{it} = w\} \times \mathbf{1}\{35\text{-day cycle}_{it}\} + \gamma_t + \varepsilon_{it} \quad (3)$$

Equation (3) is similar to Equation (1). Here, y_{it} is an indicator for whether customer i visited a pantry in week t , $\mathbf{1}week_{it} = w$ is a dummy for the week of the Social Security pay cycle, and α_i and γ_t are individual and year-week fixed effects, respectively. The new specification includes an interaction term, $\mathbf{1}week_{it} = w \times \mathbf{1}\{35\text{-day cycle}_i\}$, which captures how pantry visits differ in weeks belonging to a 35-day cycle. The coefficients β_w measure the change in visit probability relative to week two of a 28-day cycle, while δ_w measures the additional effect of a 35-day cycle. As before, ε_{it} is the error term capturing idiosyncratic shocks to pantry visits.

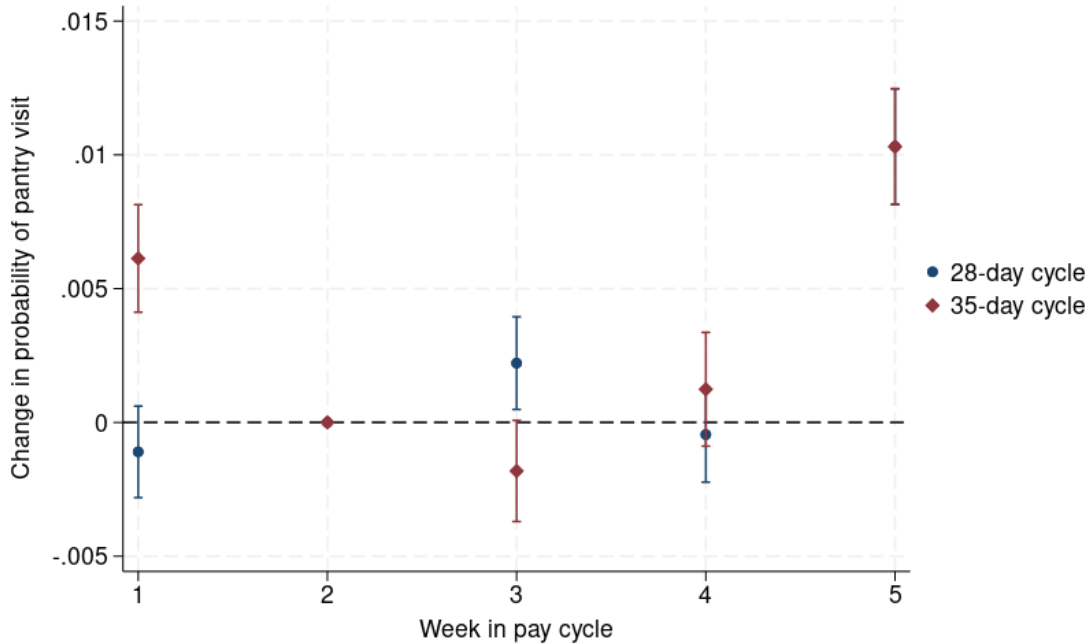


Figure 1: Change in the probability of visiting a pantry in 28-day vs. 35-day pay cycles

Notes: This figure plots the estimated change in the probability of a household visiting a food pantry relative to week two of the pay cycle (baseline) based on the estimates from Equation (3). The navy circles represent the 28-day (4-week) cycle, while the maroon diamonds represent the 35-day (5-week) cycle. Error bars represent 95% confidence intervals.

Figure 1 plots how pantry utilization varies across weeks in a 28-day (four-week) and a 35-day (five-week) pay cycle, relative to week two.⁶ In a 28-day cycle, the baseline probability of visiting a food pantry in week two is 15.7%, and utilization rises modestly in week three. Specifically, the probability of visiting a pantry increases by 0.22 percentage points, or 1.4% relative to baseline, which is consistent with the previous analysis.

During longer pay cycles, pantry utilization shifts toward the end of the cycle. The baseline probability of visiting a food pantry in a 35-day cycle is lower than in a 28-day cycle, at 13.4%, and there is no evidence of increased utilization in week three. Instead, the probability of a pantry visit

⁶Coefficients from the fully interacted model are in Appendix Table 2.

increases by 7.7% (1.03 pp) in week five and 4.6% (0.61 pp) in week one. These spikes are larger in magnitude than the increases during a 28-day cycle, suggesting that older adults rely more heavily on food pantries during longer cycles. The exhaustion of funds in the final week of a 35-day cycle carries over into the week of the subsequent check arrival (week one), suggesting that new income does not immediately offset the resource depletion from the 35-day pay period. This result indicates that the financial strain of a longer pay cycle persists even after the next benefit payment is received.

I also test how cycle length impacts food pantry visits on the intensive margin using the following Poisson specification:

$$\mathbb{E}[y_{it} | X] = \exp\left(\alpha_i + \sum_{w=2}^5 \beta_w \mathbf{1}\{week_{it} = w\} + \sum_{w=2}^5 \delta_w \mathbf{1}\{week_{it} = w\} \times \mathbf{1}\{35\text{-day cycle}_{it}\} + \gamma_i\right), \quad (4)$$

where y_{it} is the total number of pantry visits made by customer i in week t . Equation (4) reflects the linear probability model by including the interaction term, $\mathbf{1}week_{it} = w \times \mathbf{1}\{35\text{-day cycle}_i\}$. In this model, The coefficients β_w measure the change in the count of visits relative to week two of a 28-day cycle, while δ_w measures the additional effect of a 35-day cycle.

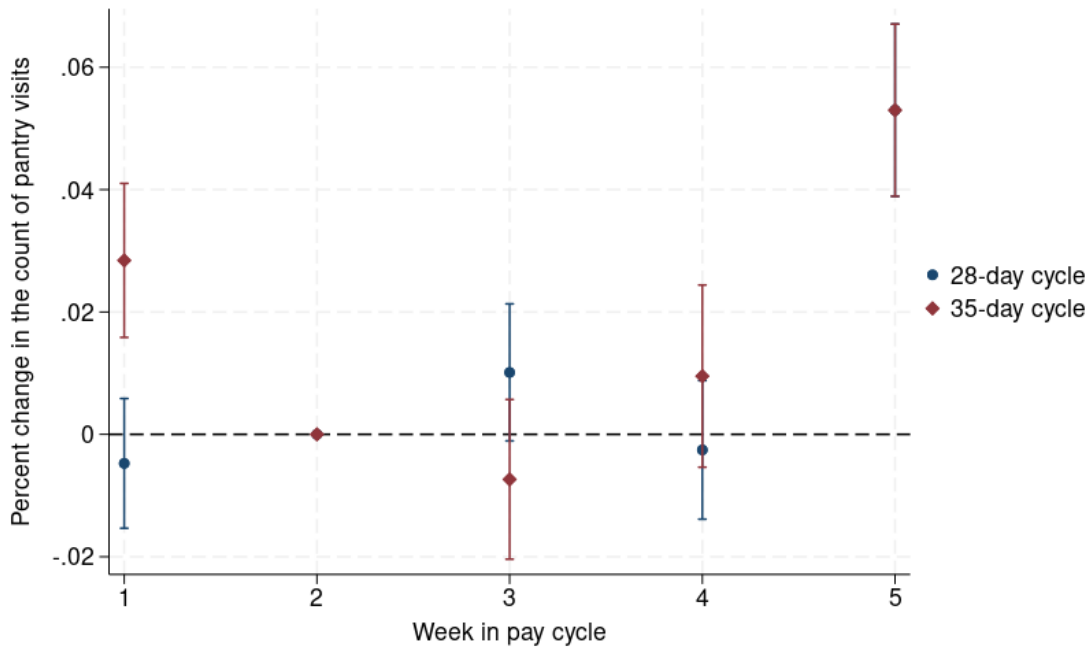


Figure 2: Change in the count of pantry visits in each week of a 28-day vs. 35-day pay cycle

Notes: This figure plots the estimated change in the number of food pantry visits relative to week two of the pay cycle (baseline) based on the estimates from Equation (4). The navy circles represent the 28-day (4-week) cycle, while the maroon diamonds represent the 35-day (5-week) cycle. Error bars represent 95% confidence intervals.

Figure 2 plots the percent change in the number of visits in 28-day and 35-day cycles, relative to the baseline of week two in a 28-day cycle. Similar to the extensive margin, customers increase their total number of visits in week five of the cycle, with a total increase in the count of visits by of 5.3% relative to the baseline. Visits remain elevated into payday week relative to baseline, with a 3.3% increase in the total number of visits.⁷ These results suggest that longer gaps between payments lead not only to changes in the timing of pantry visits, but also to a reallocation of visits across the cycle, demonstrating that households reallocate their use of charitable food assistance to bridge the extended gaps between benefit receipts.

5 Discussion and Conclusion

Adults over 65 represent an increasing share of the United States population. Many low-income, older adults rely on low-levels of Social Security retirement income, leading to tradeoffs between high-priority spending, including food, housing, and medical expenses (Heflin and Meyer 2025). Reductions in food consumption in response to reduced resources toward the end of payment cycle can be dangerous, particularly for older adults (Basu, Berkowitz, and Seligman 2017; Ziliak and Gundersen 2014) Identifying effective ways to support older adults, like charitable services, can help inform policies aimed at promoting well-being in later life.

This paper examines the role of charitable food assistance in supporting retirement-age adults, particularly over the Social Security income cycle. Older adults who use food pantries or community meals sites rely more heavily on these services than their younger counterparts, visiting the pantry around once per month. Using the quasi-random timing of Social Security retirement income, I find that pantry customers who have reached FRA are slightly more likely to visit during week three of their income cycle and increase the total number of visits during the same week. This effect is more pronounced for single retirees who may depend on a single income source.

Social Security payments are disbursed on Wednesdays, causing some payment cycles to last 35 days rather than 28 days. While reliance on food pantries is relatively stable during 28-day intervals, the 35-day cycle acts as a recurring financial stressor. During these extended periods, the probability of a pantry visit increases by 7.7% in the final week, significantly larger in magnitude than the average increase across all cycles. This increase in utilization persists into the first week of the next cycle, suggesting that 35-day cycles exacerbate end-of-cycle resource constraints, leading households to turn to charitable resources to bridge the gap. Altogether, these results show that even predictable public income does not fully smooth food needs for some older adults and that charitable food assistance plays a role in bridging gaps between paychecks.

A preference for food pantries could help explain why older adults are less likely to take up SNAP

⁷Table 2 presents a complete table of the results from Equation (4).

and could provide guidance for policymakers seeking to reach retirement-aged adults who may be struggling to make ends meet. This paper focuses on food pantry and community meal customers who have already opted in to charitable food assistance. Therefore, this work does not capture older adults who may be unable to access these resources because of mobility limitations, transportation barriers, or restricted pantry access. With increased funding, food pantries and community meal sites could expand their services and adapt to the needs of older adults, drawing more individuals into these programs and improving food security among seniors. For example, some food pantries within the MOFC network offer delivery services for customers who face mobility challenges or lack reliable transportation. Because arranging delivery services is costly, charitable organizations would require substantial investment to offer this option at scale. Additional research is needed to determine the impact of accessible programs on reaching more customers

Additionally, this paper shows that some low-income older adults regularly use food pantries, suggesting that providing wraparound services at pantry locations may help connect vulnerable seniors to other vital programs. Offering services such as SNAP or Medicare enrollment assistance, vaccinations or health screenings, or financial support with utilities or housing could strengthen the broader safety net for an aging population. Future research could examine whether offering expanded services reduces consumption cycles and improves take-up of other programs.

In addition to suggesting improvements and expansions to pantry services, these results offer pragmatic insights for food banks, pantries, and other charitable food sites. Because food pantry utilization increases during 35-day cycles, and these cycles are predictable, pantries can anticipate these periods of increased demand and allocate resources, such as delivery slots, volunteer staffing, or additional food, to coincide with the end of extended cycles.

This paper provides new evidence on how older adults combine public and charitable food assistance to manage consumption over predictable income cycles. By using high-frequency administrative data on pantry visits, this study highlights patterns of reliance on charitable services. The findings suggest that even with stable retirement income, some older adults experience acute, short-term gaps in food access—gaps that are increasingly filled by the charitable sector as the payment cycle extends. Understanding how and when seniors use these resources helps clarify the role of private food assistance within the broader safety net and offers insight into how policies and community-based programs can be better aligned to support financial stability and food security in later life.

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A Appendix

Table 1: Months with Five Wednesdays, 2018–2023

Year	Months with 5 Wednesdays
2018	January, May, August, October
2019	January, May, July, October
2020	January, July, September, December
2021	March, June, September, December
2022	March, June, August, November
2023	March, May, August, November

Notes: Months with five Wednesdays create a 35-day gap between Social Security payments for some beneficiaries, instead of the usual 28-day interval. This longer interval can temporarily exacerbate end-of-cycle resource constraints.

Table 2: Linear Probability Model of Pantry Use by Pay Cycle Length

	Change in Probability (%)
<i>Week in cycle (28-day / 4-week cycle)</i>	
Week 1 (paycheck week)	-0.11% (0.09%)
Week 3	0.22%** (0.09%)
Week 4	-0.05% (0.09%)
Week 5	1.03% (0.11%)
<i>35-day cycle indicator</i>	
35-day cycle	-2.23% (0.08%)
<i>Week × 35-day cycle interactions</i>	
Week 1 × 35-day	0.72%** (0.10%)
Week 3 × 35-day	-0.40%** (0.11%)
Week 4 × 35-day	0.17% (0.11%)
Observations	6,716,249
Individuals	45,737
Baseline predicted probability (Week two, 28-day cycle)	15.7%

Notes: This table reports coefficients from a linear probability model estimating the probability of visiting a food pantry as a function of week in the pay cycle and an indicator for a 35-day (five-week) cycle. Week two of a 28-day (four-week) cycle is the omitted baseline. Standard errors, clustered at the individual level, are shown in parentheses. ** $p < 0.05$.

Table 3: Poisson Model of Pantry Visits by Pay Cycle Length

	Change in Visits (%)
<i>Week in cycle (28-day cycle)</i>	
Week 1 (paycheck week)	-0.47% (0.54%)
Week 3	1.01%* (0.57%)
Week 4	-0.25% (0.58%)
Week 5	5.30%** (0.72%)
<i>35-day cycle indicator</i>	
35-day cycle	-11.23%** (0.54%)
<i>Week × 35-day cycle interactions</i>	
Week 1 × 35-day	3.32%** (0.62%)
Week 3 × 35-day	-1.75%** (0.73%)
Week 4 × 35-day	1.21% (0.77%)
Observations	6,716,228
Individuals	45,716

Notes: This table reports coefficients from a conditional fixed-effects Poisson model estimating the number of pantry visits as a function of week in the pay cycle and an indicator for a 35-day (five-week) cycle. Coefficients are reported as approximate percent changes ($100 \times \beta_w$ or $100 \times \delta_w$). Week two of a 28-day (four-week) cycle is the omitted baseline. The interaction terms represent the additional percentage change in visits during 35-day (five-week) cycles relative to the corresponding week in a 28-day cycle. Standard errors, clustered at the individual level, are in parentheses. * $p < 0.10$, ** $p < 0.05$.