

Tracking Double-up Food Bucks (DUFB) Program Use Among Supplemental Nutrition Assistant Program (SNAP) Recipients and the Implications for Healthy Food Access

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Summary

Acceptance of SNAP benefits has increased in farmers' markets (FM) over the years. However, getting SNAP recipients to take up the opportunity of extra dollars for healthy food options remains a challenge. Thus, we tracked the use of the Double-up Food Buck (DUFB) program among SNAP recipients who visit participating FMs in Utah to understand the unique characteristics of the program users. Our results identified varying types of program users (multiple and single market shoppers, more frequent and less frequent shoppers). While our findings indicate a higher DUFB transaction in token value among frequent users, larger markets are more likely to have higher DUFB transactions with a higher number of market visits compared to smaller ones. In conclusion, while all types of users may add to the total revenue generated by participating FM, additional initiatives are required to encourage frequent visits and uptake of the program for better access to healthy foods.

Keywords: Farmers' market, Incentive program, SNAP benefits, Double-up Food Buck, Incentive tracking system

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Table of Contents

List of Figures	a
Introduction	1
Methods	1
Compliance to Tracking System and Data Analysis	1
Results and Discussion	2
Data Description	2
Tracked DUFB Users and Transactions	3
Frequency of Shopping	3
Multiple Market Shopping	7
Conclusion	9
Recommendations for Policy, Practice, and Research	9
Appendix	10
Appendix A. Categories of the Different Entries	10
Appendix B. Sticker Record-keeping and Entries Associated with a Unique Individual Sticker (Tracked) across the Different Markets	11
Appendix C: Total DUFB per Market Versus Tracked DUFB Users	12
Appendix D: Frequency Of Farmer’s Market Visit Versus Number of Individuals	12
Appendix E: Number of Weeks of DUFB Possible and Recorded Per Market	13
References	15

List of Figures

Figure 1: Frequencies of Shopping Versus DUFB Tokens Distributed Over the Market Season..... 4

Figure 2: Frequencies of Shopping Versus Amount of SNAP Distributed Over the Market Season..... 5

Figure 3. Amount of DUFB Distributed Per Frequency of Shopping in Each Market..... 6

Figure 4. Amount of SNAP Distributed Per Frequency of Shopping in Each Market 7

Figure 5. Number of Multiple Market Shoppers between Markets

Introduction

Double-up Food Bucks, DUFB is a fruit and vegetable (FV) incentivize program designed to improve the dietary quality of low-income populations through the Supplemental Nutrition Assistance Program (SNAP). Prior studies have shown that DUFB program has positive effects on the F&V purchase behavior (such as expenditure share, variety purchased, frequency, and amount of F&V purchase) (Steele-Adjognon & Weatherspoon, 2017; Alaofè, Freed, Jones, Plano, & Taren, 2017) and consumption (such as number of F&V consumed) (Savoie-Roskos, Durward, Jeweks, & LeBlanc, 2016; Alaofè et al., 2017; Durward et al., 2018). Nevertheless, DUFB use tends to be less common among SNAP recipients with initial low FV intake, who do not have previous experience shopping at a farmers' market with their SNAP benefit, and who have lesser income (author's data currently in publication, available on request).

Given the potential benefit of this program, the question of how to get these different subgroups within the target population attracted to this SNAP-based incentive program remains. Further evaluation of the usage of the incentive program will provide insight on how to best target the intended population. This report explored the utility of DUFB by SNAP recipient at farmers' market and provided the estimate of numbers of unique program users in Utah State.

Methods

To estimate the number of the unique user of the program, we used a sticker number system to track DUFB transactions among SNAP recipients who visited a participating farmers' markets (FM) in the 2018 FM season. 15 DUFB participating FMs were included in the study and all DUFB sticker numbers issued to participating FMs were between 1-3000; each market received a distinct range of sticker numbers. Prior to the beginning of the FM season, market managers were asked to adopt the tracking system for the 2018 FM season and were also provided with instructions on how to use the tracking resources. At the beginning of the FM season, all farmers' market shoppers (SNAP recipients) who approach the information desk were asked if he or she was interested in getting a colored (green), numbered sticker on their Electronic Benefit Transfer (EBT) card. A green sticker was placed on the EBT card (in a way that the sticker does not cover the magnetic strip or the card number) of any shopper who showed interest, and this was used to track all transactions made by the individual shopper throughout the FM season. Starting with the first transaction where a green sticker was issued, all subsequent transactions (SNAP dollar spent and DUFB token distributed) of an individual shopper with a green sticker at any of the participating markets were recorded by the vendor against their sticker number. On every FM operation hours/day during the 2018 FM season, any SNAP shoppers who had no sticker on his or her EBT card was asked if he or she will like to have one and their transactions were recorded. At the end of the FM season, the transaction records of all shoppers in each market were collated and the total transaction for the season from each participating market was collated.

Compliance to Tracking System and Data Analysis

During data processing, we assessed compliance to the tracking system and found that there were instances where vendors recorded the last 4 digits of the shopper's EBT card instead of the green

sticker number, which was part of the reporting from the previous year. Besides mis-recording, we also identified additional instances where compliance with the tracking system was not 100%.

To process the data for analysis, the first step was to identify the numbers that were actual DUFB sticker numbers. We set the following rules to guide the data sorting:

- Identifying and separating numbers that were below 3000.
- Identifying numbers that were below 3000 which occur in sequential order within records from a specific market (these assisted the identification of the range of DUFB sticker numbers within each market). We also checked for numbers above 3000 that were on each market day's record sheet; we decided a vendor was using the last-4 digit of the EBT card for the day if there are numbers above 3000 on each day's record sheets. Hence, those numbers below 3000 that do not appear to match numbers with a market's assigned range or on a record sheet classified to report last-4 digit of EBT card were categorized as non-DUFB sticker numbers.
- Identifying sticker numbers that are within a specific market's assigned range but also appeared in another market (these were regarded as multiple market users).
- Other transactions by those who refused stickers, customers from outside Utah, numbers that occurred in multiple markets but the date of first use does not align with the market first issued that range, numbers that have no replicate in markets that were assigned that range, and some without any recorded numbers were also removed from DUFB sticker number category.

We then used descriptive analyses such as percentage, frequency, etc. to explore the unique characteristics of the individual program users whose transaction could be tracked using the sticker system (classified as a tracked individual) and generated some hypothesis for further research.

Results and Discussion

Data Description

Appendix A shows the categories of the different entries based on the method used for sorting the data. Of the 1567 SNAP/DUFB transaction entries, 1040 (66.4%) entries were associated with a tracked individual. If we look at the dollar amount of DUFB benefits distributed, 67.7% of the total amount was associated with an individual in our sticker tracking system (\$9441 out of \$13942.5¹). A similar percentage of SNAP transactions were associated with a number in the sticker system (68.9%, \$15637.11 out of \$22698.41).

Appendix B shows the sticker record-keeping compliance rate by markets. Entries from 3 markets (Benson, Syracuse, and Brigham) could not be included as part of the tracked DUFB transactions. These results show that we did not get perfect compliance with sticker record-keeping across the participating markets. This may be due to poor communication between the market manager and the vendors or inadequate follow-up strategies by the program manager. Future studies should identify effective strategies that include adequate follow-up and monitoring of data collection to increase compliance across all participating FM.

¹ Syracuse Farmer's Market reported one transaction of \$7.50.

Tracked DUFEB Users and Transactions

Across all markets, there were a total of 592 tracked DUFEB users. Of these, 13 shopped at multiple markets, so there were 562 tracked unique individuals. Larger markets (as described by the total SNAP transaction, number of vendors, and market capacity) had a higher number of DUFEB users, a higher amount of DUFEB, and SNAP transactions. Similarly, Appendix B shows that the percentage of tracked DUFEB transactions was higher in larger markets (e.g. Ogden, Salt Lake City, and Cache FMs) compare to smaller markets. Appendix C presents a graph of the number of individuals tracked per market against the amount of tracked DUFEB token and this shows a similar trend among larger markets compared to smaller markets (i.e. there was a higher number of tracked individual with higher DUFEB token distributed). This also indicates that larger markets did a better job of adhering to the tracking system.

Frequency of Shopping

The maximum number of times that tracked shoppers made transactions during the FM season was 14 times and the minimum was once as shown in Appendix D. The data distribution in Figure 1 shows that customers who came to the market more frequently received a larger number of matched tokens from the DUFEB program over the market season. This makes intuitive sense since shoppers are limited to \$10 in tokens per market visit. On the other hand, we did not see a strong relationship (see Figure 2) between the number of market visits and the amount of SNAP distributed. In other words, there are individuals who visited only a few times but received a total SNAP in dollar value that is comparable to the amount spent by those who shopped many times. This difference in the trends is not surprising because the amount of matching DUFEB tokens per visit was capped while the amount of SNAP spendable per visit was not limited in the same way. These results should be considered when planning for future years. Future planning should consider if the program goals align with encouraging shopping at the market each week or maximizing benefits for all FM customers when considering the amount of allowed match per visit.

Figure 1: Frequencies of Shopping Versus DUFB Tokens Distributed Over the Market Season

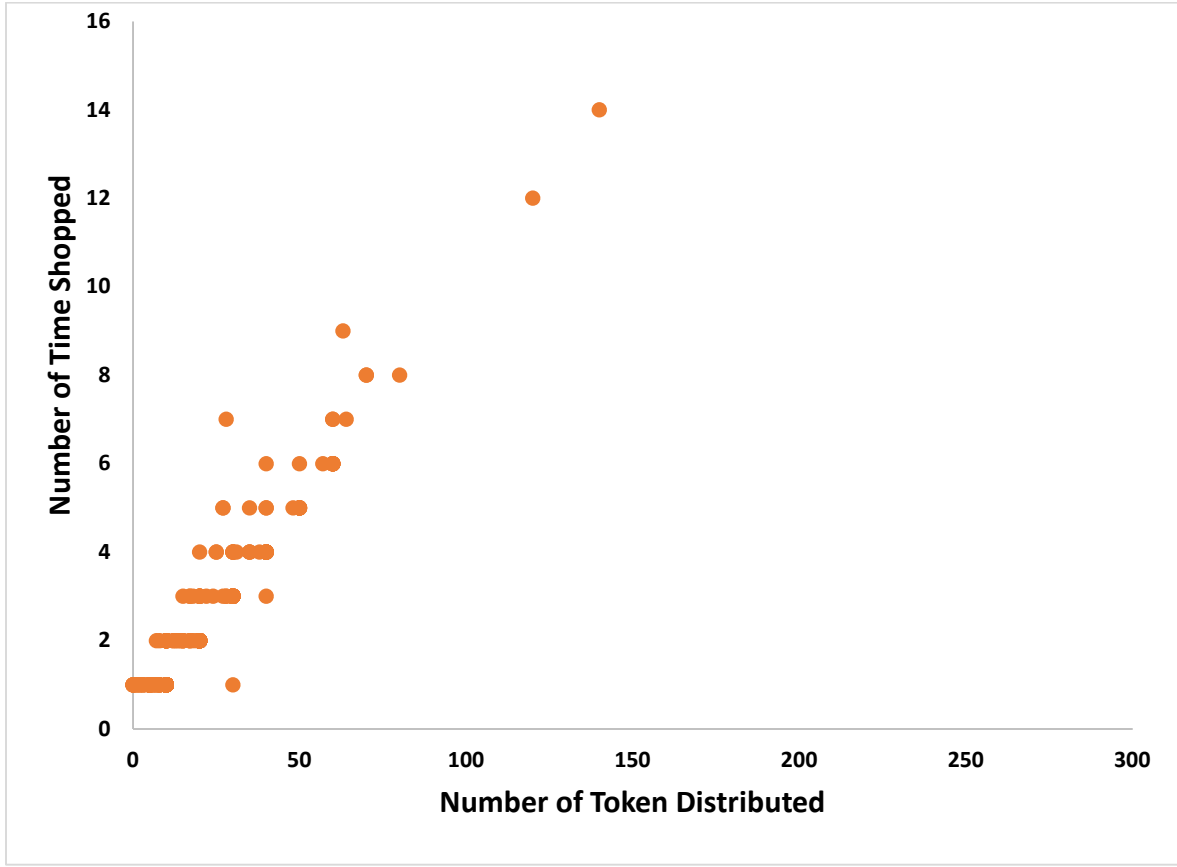
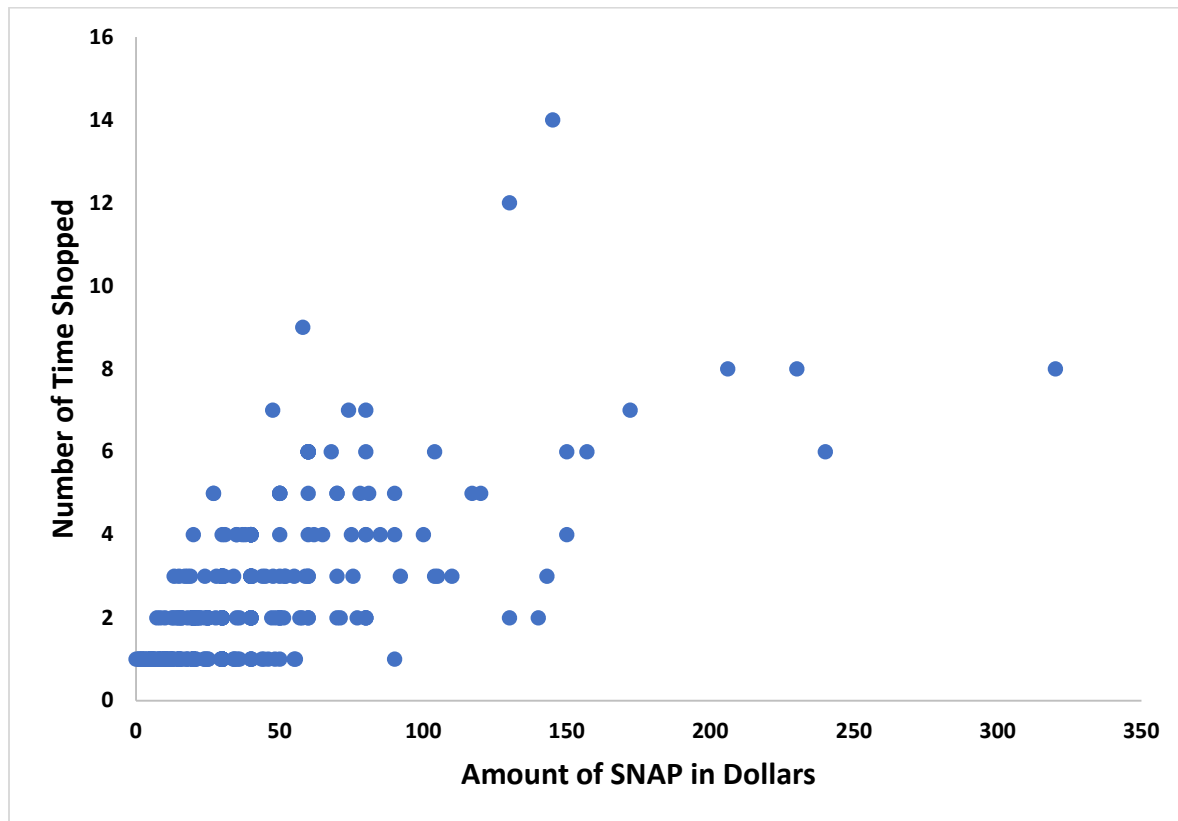


Figure 2: Frequencies of Shopping Versus Amount of SNAP Distributed Over the Market Season



The amount of DUFB and SNAP distributed by the frequency of shopping vary across the different markets. Figures 3 and 4 showed that smaller markets have a similar trend for DUFB and SNAP transactions irrespective of the number of times FM was visited while bigger markets have a higher amount of SNAP and DUFB distributed among individuals who shopped fewer times compared to those who shopped many times. It may be that larger markets have a higher number of individuals who shop only a few times but whose transaction added up to give a high total transaction for the FM season. Also, it is important to note that markets were not opened for the same number of weeks (see Appendix E), this indicates that there is a limit to the frequency of visits that could possibly be made by DUFB users at some FM. Smaller markets like Summit FM and Syracuse were opened for a lesser number of weeks compared to larger markets and this may also be responsible for the relationship observed between frequency of shopping and amount of SNAP and DUFB distributed in such smaller markets.

Figure 3. Amount of DUFB Distributed Per Frequency of Shopping in each Market

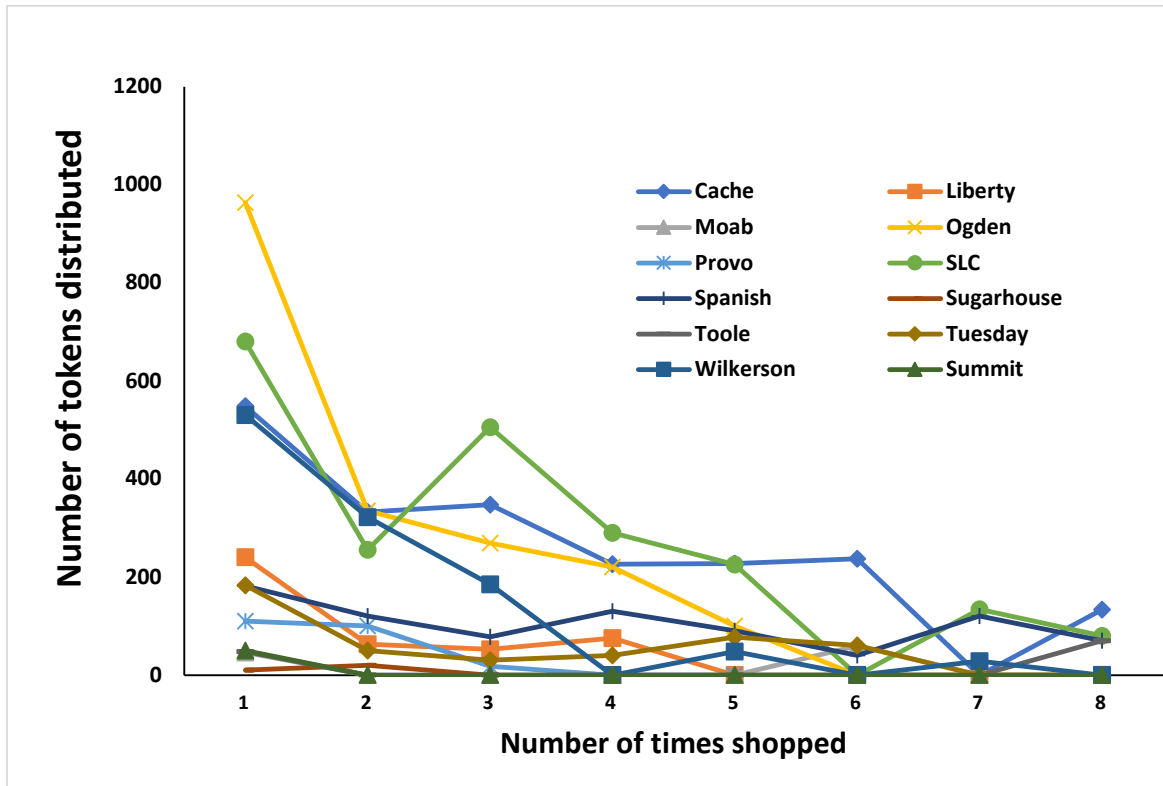
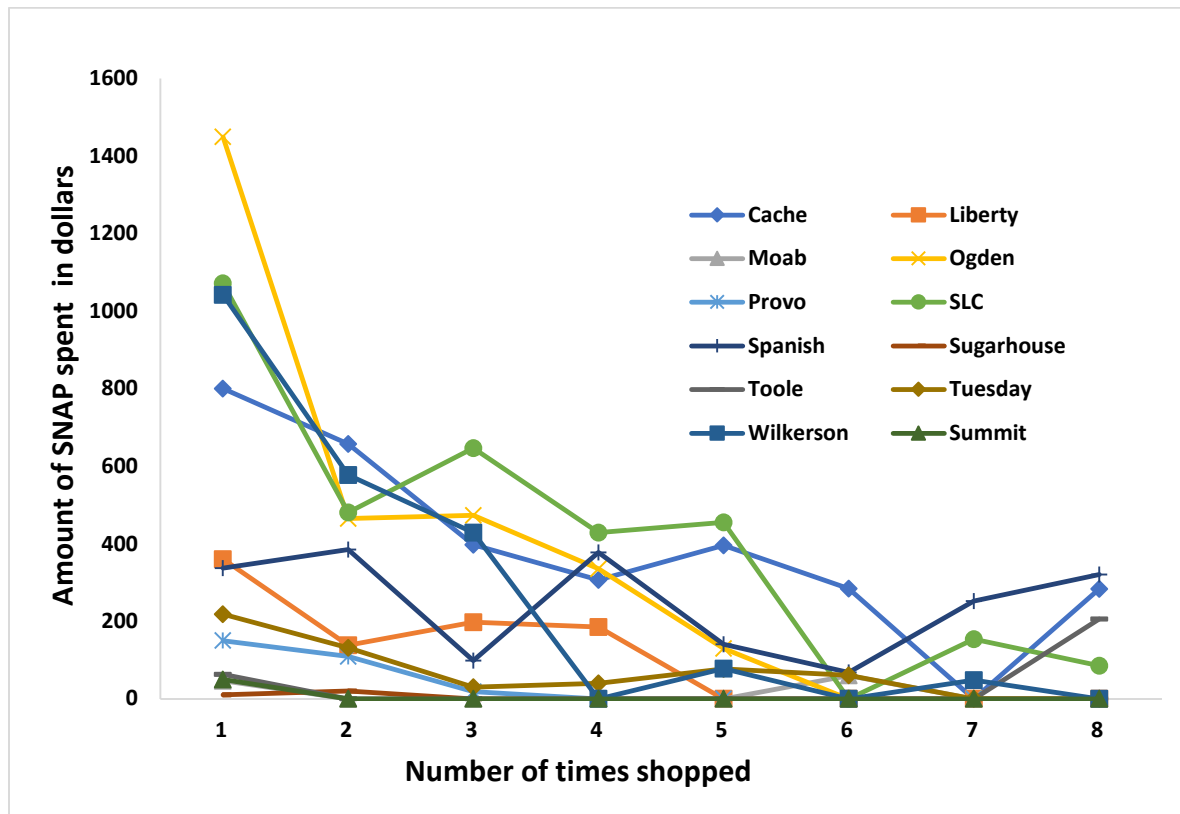


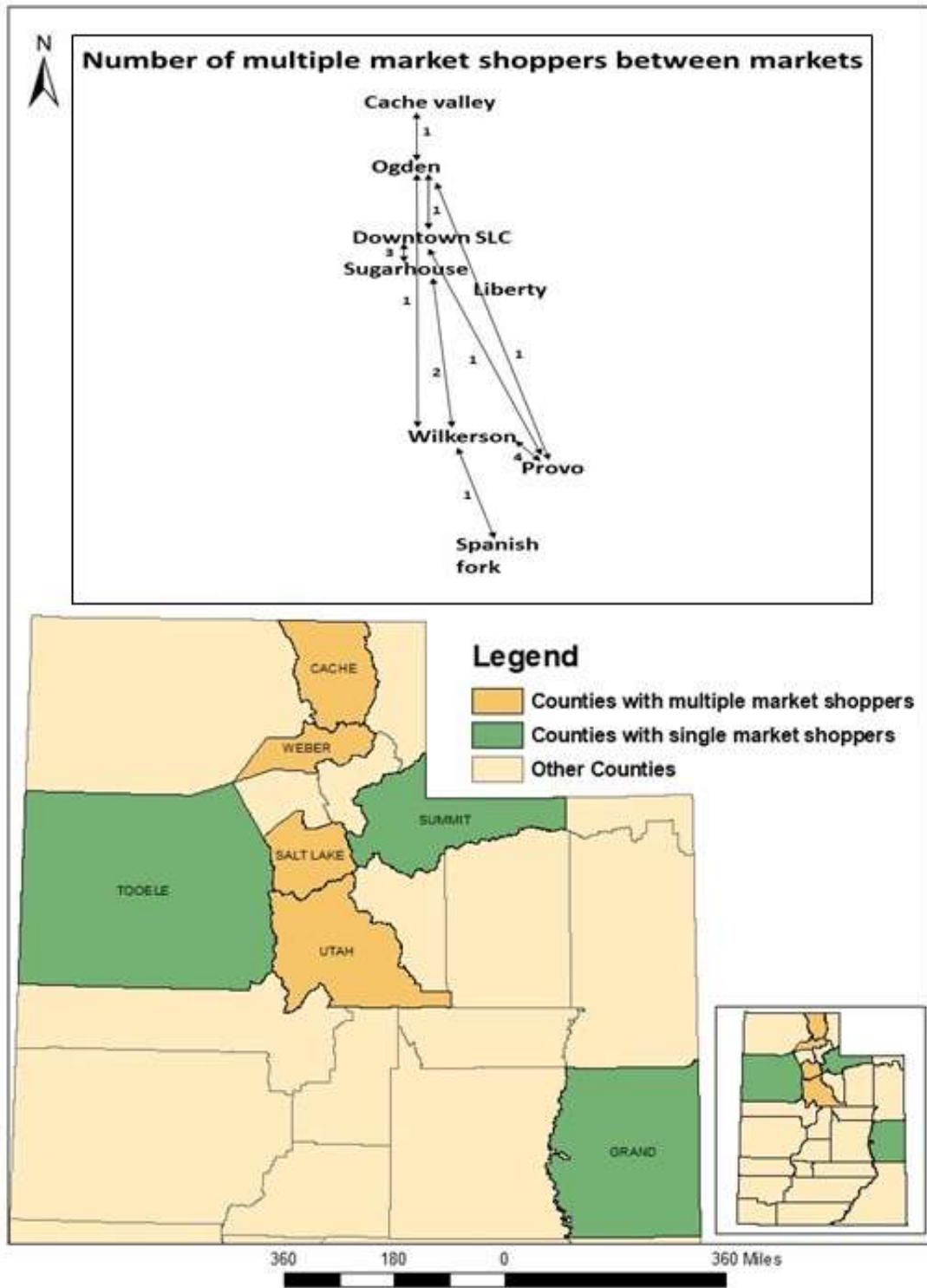
Figure 4. Amount of SNAP Distributed Per Frequency of Shopping in Each Market



Multiple Market Shopping

Out of 562 tracked unique DUFEB users, there were only 13 (2.3%) who shopped at multiple markets. These shoppers were responsible for 50 (4.8%) of the tracked transactions. Multiple market shoppers made transactions across markets a maximum of 9 times and a minimum of 2 times, an average of 3.8 times. Multiple-market shoppers visited a maximum of 3 different markets throughout the market season, with most multiple-market shoppers only going to 2 markets. Wilkerson has the highest number of multiple market shoppers (n=8) and 3 markets (Tooele, Moab, and Summit) had no multiple market shoppers.

Figure 5. Number of Multiple Market Shoppers between Markets



Conclusion

With the way the DUFB program is currently designed, frequent visits to the FM may likely increase the use of and the amount of DUFB benefits that the program participants can access. Therefore, it is important to encourage frequent use among SNAP recipients to improve access to reduced-cost fruits and vegetables. However, encouraging program usage among all types of shoppers (more and less frequent shoppers, multiple markets, and single market shoppers) contributes to the total SNAP revenue for the markets.

Recommendations for Policy, Practice, and Research

Previous studies have established evidence that SNAP recipients face various barriers (lack of transportation, lack of awareness, inconvenient time, location of operation, etc.) in their ability to access farmer's market incentive programs (Freedman et al., 2016; Nuss, Skizim, Afaneh, Miele, & Sothern, 2017; Olsho et al., 2015; Savoie-Roskos et al., 2016;). These potential limitations indicate that not all SNAP recipients may be able to make frequent FM trips that could in turn improve their access to healthier food options. Nutrition programs that would help increase awareness of the DUFB program's benefits among SNAP recipients especially at the FM outlets might encourage frequent visits. Further, strategies that could encourage frequent visits among FM shoppers may be set in place in individual markets during the FM season e.g. coupons, refer-a-friend and points accumulation per visit to redeem later etc. Moreover, unless the different barriers to healthy food access are addressed, frequent use of the incentive program among the intended population might not be possible. Therefore, policies that would address other barriers such as transportation or expanding the program to vendors that are open for more hours. In addition, a more-detailed and well-monitored tracking system is needed to evaluate community-based programs like this SNAP-based incentive program. Therefore, future research should examine an effective way to monitor such community-based programs using a tracking system and identify best practices for monitoring and evaluating such programs. Finally, future research using a tracking system should ensure that adequate information is provided for the farmer's market managers and that the data collection process is well monitored.

Appendix

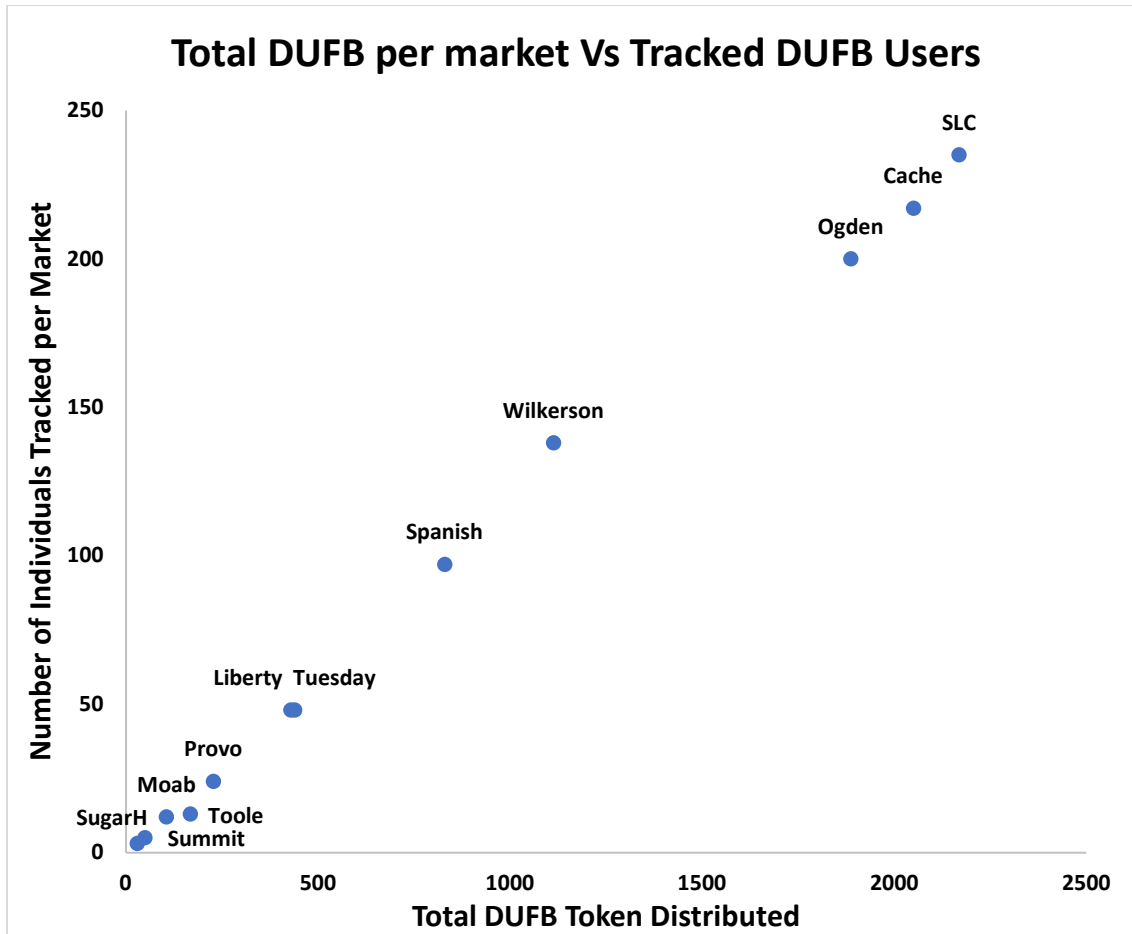
Appendix A. Categories of the Different Entries

Categories	Frequency	Percentage (%)
Numbers within DUFB sticker and market range	1040	66.4
Numbers within DUFB sticker but outside any market range	110	7.0
Numbers that has no replicate in markets within that range	28	1.8
Numbers occurring in multiple markets but date of first use does not align with market first issued that range	2	0.1
Numbers outside DUFB sticker numbers (>3000)	341	21.8
Numbers that matches Rx number with a different sticker number but not the same with the similar DUFB sticker number	17	1.1
No sticker number recorded	23	1.5
Refused Sticker	3	0.2
Numbers from outside Utah State	3	0.2

Appendix B. Sticker Record-keeping and Entries Associated with a Unique Individual Sticker (Tracked) across the Different Markets

Markets	Sticker-tracked DUFB Entries	Excluded DUFB Entries	Total Entries	Tracked Unique Individuals	Total amount of SNAP (\$)	Total DUFB amount of (Token)	Tracked amount of SNAP (\$)	Tracked amount of DUFB (Token)	% Tracked SNAP	% of Tracked DUFB Token	Tracked DUFB Vs Total SNAP Transactions (%)
Benson Grist Mill	0	26	26	0	371	234	0	0	0	0	0
Brigham City	0	23	23	0	441	164	0	0	0	0	0
Syracuse	0	13	13	0	108.5	105.5	0	0	0	0	0
Sugar House Farmers Market	3	40	43	2	486	376	30	30	6	8	6
Provo	24	251	275	17	3415	2546	277	228	8	9	7
Moab	12	16	28	7	296	116	106	106	36	91	36
Tooele Valley Nursery	13	2	15	6	299	138	296	108	99	78	36
Spanish Fork	97	19	116	40	2247	973	1977	830	88	85	37
SLC Downtown Farmers Market	235	113	348	122	5141	3138	3319	2169	65	69	42
Summit County Community Market	5	0	5	5	50	50	50	50	100	100	46
Liberty Park	48	2	50	34	900	450	880	430	98	96	48
Wilkerson	138	9	147	92	2278.91	1167	2172.11	1113	95	95	49
Cache Valley Gardeners Market	217	5	222	104	3174	2090	3122	2050	98	98	65
Ogden	200	4	204	136	2882	1917	2852	1887	99	98	65
Tuesday Farmers Market	48	4	52	27	609	478	556	440	91	92	72

Appendix C: Total DUFB per Market Versus Tracked DUFB Users



Appendix D: Frequency Of Farmer’s Market Visit Versus Number of Individuals

Frequency of Visits	Numbers of Individual
1	365
2	95
3	60
4	31
5	16
6	12
7	5
8	5
9	1
12	1
14	1

Appendix E: Number of Weeks of DUFB Possible and Recorded Per Market

Market	Number of weeks in the records	Number of weeks between start date and end date recorded	Operation days	First day on record	Last day	Note
Benson Grist Mill	10	9	Saturdays	4th Aug	29th Sept	We have a record for 6th Sept, which is not a Saturday but a Thursday
Brigham City	6	7	Saturdays	11th Aug	22th Sept	missing record for 8th Sept
Cache Valley Gardeners Market	11	12	Saturdays	4th Aug	20th Oct	Missing 6th Oct
Liberty Park	10	10	Friday/ Saturdays	3rd Aug	6th Oct	
Moab	17	22	Friday	4th May	28th Sept	missing May 18th, 25th, July 13th, Aug 3rd, 10th
Ogden	12	13	Saturdays	4th Aug	27th Oct	missing Sept 15th
Provo	15	15	Saturdays	21st July	27th Oct	
SLC Downtown Farmers Market	10	12	Saturdays	4th Aug	20th Oct	missing Aug 18th and 25th
Spanish Fork	12	13	Saturdays	4th Aug	27th Oct	missing Sept 15th
Sugar House Farmers Market	11	12	Wednesday	11th July	26th Sept	missing July 18th
Summit County	2	5	Tuesdays	14th Aug	11th Sept	missing Aug 21th, 28th, and Sept 4 th

Community Market						
Syracuse	6	8	Wednesday	11th July	29th Aug	missing July 25th, Aug 1st
Tooele Valley Nursery	9	9	Saturdays	4th Aug	29th Sept	
Tuesday Farmers Market	8	8	Tuesdays	7th Aug	25th Sept	
Wilkerson	14	14	Everyday	1st Aug	29th Oct	

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