USDA United States Department of Agriculture

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Feasibility Study of Capturing Supplemental Nutrition Assistance Program (SNAP) Purchases at the Point of Sale: Technical Solutions Report (Summary)

Background

This study explored the feasibility of creating a data collection system capable of directly and automatically providing the Department of Agriculture's Food and Nutrition Service (FNS) with item-level data on food purchases made by Supplemental Nutrition Assistance Program (SNAP) households. The data would be captured at the point of sale (POS) from purchases made using Electronic Benefit Transfer (EBT) cards.

Currently, only total transaction amounts for purchases made with SNAP EBT cards are available to FNS. The Food and Nutrition Act does not require retailers to collect or transmit item-level transaction information. Therefore, FNS must rely on consumer-reported data and other data sources in order to describe the diet and food purchasing patterns of SNAP households.

Methods

Information for this feasibility study was collected through interviews with key stakeholders, review of relevant documents, and targeted research to determine the necessary technical parameters. Building on this data-gathering process, an array of preliminary technical alternatives for collecting, transmitting, and storing item-level purchase data was developed. FNS then narrowed the alternatives into the set of technical solutions described in this report.

Findings

The feasibility study points to several challenges and constraints to capturing item-level SNAP transaction data.

- **During transactions, SNAP participants may use their SNAP benefits only or a combination of SNAP and another payment type.** Retailer systems are not designed to distinguish between SNAP-eligible items purchased with SNAP benefits versus another form of tender when those purchases are part of the same transaction.

- **A key element will be the ability to obtain unique identifiers – a Universal Product Code (UPC) or Product Look-Up code (PLU) – for items purchased**. Although many UPCs and PLUs are universal, others are retailer-specific. In addition, new codes are constantly being added as new products are developed.

- **Retailers authorized to accept SNAP currently utilize a variety of different POS technologies, which would complicate the design of a data collection and storage system.** Many large retailers have sophisticated Integrated Electronic Cash Register (IECR) systems in which cash registers are linked to a scanner, a store inventory database, and a POS terminal that processes a variety of payment card transactions. However, many SNAP retailers have less sophisticated systems that do not include scanners or inventory databases and that have separate POS terminals that process only EBT transactions. While the 2014 Farm Bill would require that all nonexempt stores use scanner devices in the future, regulations will need to be promulgated to implement the provision.

In the current environment, it is most feasible to focus on designing technical solutions for stores operating IECR systems. Focusing on IECR systems will minimize the hardware or software modifications needed and would permit the capture of item-level transaction data from the majority of SNAP transactions. Because IECR systems are technologically sophisticated, they can most easily be adapted to fulfill FNS data needs. Furthermore, these systems include dynamic inventory databases that contain product information such as UPCs. Eighty-four percent of SNAP redemptions occur in larger stores that use IECRs.

Capturing and transmitting item-level transaction data will require a uniform data capture and transmission standard. SNAP EBT data transmission is governed by industry standards and operating rules. These standards ensure that all retailers are able to capture all the information required in order to authorize SNAP transactions. Current standards do not address transmission of item-level data such as UPCs. Therefore, a new standard would need to be developed that included the new data fields – a complex and potentially time-consuming process.

The size of the data files will likely require significant upgrades in storage and communications infrastructure for retailers and any other parties involved in transmitting item-level data. Item-level transaction data could be transmitted either in real-time (i.e., when the transaction occurs) or in batch form (i.e., once per day). In either case, retailers and other stakeholders would likely need to upgrade their communications infrastructure and their storage capacity in order to accommodate transmission of these new, larger data files.

Data could be sent either through the existing transmission infrastructure or through a new transmission route. In stores that operate IECR systems, the following parties are involved in SNAP EBT transactions: the retailer, the Third Party Processor (TPP) who provides the retailer's POS terminal, and the EBT processor who approves the EBT transaction. Utilizing the existing transmission route would require modifications on the part of all these stakeholders. Bypassing the existing transmission route would eliminate the need for modifications on the part of EBT processors and other stakeholders, but it would present other challenges.

Industry standards require that customer identifiers such as the PIN or EBT card number be encrypted or masked, which presents additional challenges for system design. Currently, these identifiers are encrypted at the POS terminal and decrypted by TPPs during the transaction approval process.

Storing and accessing the item-level transaction data will require a data warehouse substantially larger than current FNS capacity. More details on storage and processing requirements will be identified during the proof-of-concept testing conducted during the next phase of this project.

Proposed Technical Solutions

The technical alternatives developed for the study focus on three solution areas: POS technical solutions, communication and data transmission, and data storage. POS technical solutions focus on the changes that would need to be made at the point of sale to capture and process item-level transaction details. Communications solutions focus on changes needed to send that information from the retailer to FNS. Data storage solutions focus on changes needed to process, store, and access the data.

The technical solutions proposed are combined into four "Solution Sets" that vary in terms of how data are collected and packaged, the transmission route used, and frequency of transmission. All four proposed solution sets are designed to operate in an IECR environment.

Options	Solution Set 1	Solution Set 2	Solution Set 3	Solution Set 4
Data Capture/ Processing	Transaction with Item-Level Detail (TWILD) File		Email Message	TWILD File
Transmission Path	Existing Route	Existing Route	New Route	New Route
Transmission Frequency	Real time	Batch	Real Time	Batch
Encryption	Can be encrypted or decrypted			
Storage	Multiple storage solutions available			

During the next phase of this project, FNS will select a subset of these solution sets for further testing. This proof-of-concept testing will focus on demonstrating that item-level data of sufficient quality can be collected using the proposed technical solutions.

For More Information

Katz, Slava, Steven Garasky, Kassim Mbwana, Samuel Ampaabeng, Zachary Miller, Andres Romualdo, Mana Roy. *Feasibility Study of Capturing Supplemental Nutrition Assistance Program (SNAP) Purchases at the Point of Sale: Technical Solutions Report.* Prepared by Impaq International, LLC for the U.S. Department of Agriculture, Food and Nutrition Service, November 2016. Available online at www.fns.usda.gov/research-and-analysis.