
Appendix B: Research Objectives and Questions

Table B-1. Objectives 1 and 2: Research Questions and Data Elements

Research Question	Data Element
Objective 1. Determine and describe the requirements for installing and operating electronic scanning systems at small retailers.	
1.1 What are the requirements for electronic scanning systems that can electronically confirm which items are SNAP-eligible and scan the price of all items that a customer may wish to purchase with SNAP benefits from the retailer?	Hardware required to electronically scan and confirm products are SNAP eligible Software required to electronically scan and confirm products are SNAP eligible Software required to scan prices of SNAP-eligible products Accessibility of Universal Product Code (UPC) database Process to keep track of store inventory
1.2 What are the requirements associated with ongoing maintenance and support for an electronic scanning system, including maintenance of associated product databases?	Frequency of technology updates for scanning systems Frequency of product database updates Availability of maintenance contracts
1.3 What are the requirements for a system with the functionality described above, as well as full integration with the EBT POS terminal?	Software required to be fully integrated with EBT POS
1.4 What is the length of time necessary for different store types to select and implement an electronic scanning system (for both the minimum requirements and integration with the EBT terminal)?	Labor hours, by store type and chain status, to select scanning systems Employee labor category responsible for selecting scanning systems and/or use of a consultant Number of months (or years) from selection of scanning system to installation and use
1.5 What additional requirements (e.g., physical, training, managerial) are needed to support and maintain these systems?	Employee labor category that would require training on how to use scanning system Length of training and location of training by employee labor category Physical changes to checkout register area to accommodate scanning systems
Objective 2. Provide cost estimates for installing and maintaining electronic scanning systems in small retailers.^a	
2.1 What are the estimated costs for each phase of scanning system implementation (i.e., start-up, database maintenance, logistical, and ongoing support)?	Cost of each component (equipment, UPC database, system or database updates, maintenance)

(continued)

Table B-1. Objectives 1 and 2: Research Questions and Data Elements (continued)

Research Question	Data Element
2.2 What are the estimated costs per store?	Capital equipment and installation costs Maintenance costs (or percentage to assume each year) Utilities cost to operate equipment Number of hours and wage rate by labor category (if maintenance is done in house) Insurance costs (if applicable) Number of cash registers per store (from SCANR Survey) Cost of store renovations to accommodate space needed for scanners Cost of disruption in store operations (e.g., loss of sales) during implementation Cost savings of not having to change shelf tags or individually price each item (if applicable)
2.3 What are the estimated cost breakdowns by functionality (i.e., confirming eligible items and integrating with the EBT terminal)?	Cost of hardware and software to confirm SNAP-eligible items Cost of hardware and software to integrate with EBT terminal
2.4 How, if at all, do costs differ for stores that require system upgrades, rather than instituting a new system?	Same data elements as Research Question 2.2, but the costs are for upgrading a scanning system to meet the functionality requirements instead of instituting a new system
2.5 Are there anticipated technological innovations in electronic scanning systems that might affect cost estimates in the near term (3 to 5 years)? If so, what are the expected changes?	Expected technological innovations in next 3 to 5 years
2.6 What factors, if any, are associated with variation in the costs of installing and maintaining electronic scanning systems by small retailers?	Factors associated with variation in the cost of installing new scanning systems (if any) Factors associated with variation in maintaining scanning systems (if any)

^a As described in Section 2.5, we will collect some of the data elements in the follow-up interviews with retailers and from secondary data sources (e.g., utility rates).

Table B-2. Objective 3: Research Questions and Data Elements

Research Question	Data Element
Objective 3: Provide reliable national estimates of the extent to which scanning systems are in place at small SNAP-authorized retailers	
3.1 What is the estimated number of small SNAP-authorized stores that lack different types of scanning technology?	<p>Availability of and type of scanning system in stores</p> <ul style="list-style-type: none"> – Availability of scanning system of any kind – Availability of scanning system integrated with store inventory and can identify which items are eligible to be purchased with SNAP – Availability of scanning system with the functionality described above and integrated with the EBT terminal to not allow SNAP to be used to purchase ineligible items
	Information on who maintains and upgrades the store's front-end ECR/POS system (store employee versus outside firm)
3.2 How does the availability of scanning technology vary by key retailer subgroups, including store type, urbanicity, and other store-level characteristics?	<p>Information on store characteristics</p> <ul style="list-style-type: none"> – Chain versus independent (if chain, number of establishments) – Total annual sales for past year (available from frame) – Number of full-time employees – Number of part-time employees – Number of registers – Store type (available from frame) – Rural/urban location (available from frame) – Whether the store is authorized by the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) – Number of different types of UPCs and random-weight store keeping units (SKUs) sold by store
3.3 What are the barriers and facilitators to using scanning technologies by small SNAP-authorized retailers?	<p>Availability of resources needed for stores to implement scanning systems (e.g., type of Internet access)</p> <p>Whether there is a person responsible for operating and maintaining the system (among users)</p>

(continued)

Table B-2. Objective 3: Research Questions and Data Elements (continued)

Research Question	Data Element
3.4 What is the estimated number or proportion of current SNAP-authorized retailers that may not comply with this provision because of cost or other barriers and instead choose to leave SNAP?	<p>Number of SNAP-authorized retailers that do not currently have scanning systems and indicate a requirement to implement a system would affect their decision to remain authorized</p> <p>Key factors these retailers suggest as reasons:</p> <ul style="list-style-type: none">– Low SNAP sales volume– Personnel challenges– Technical complexities– Lack of employees with technical knowledge– Staff have limited English-speaking ability– Store space and/or infrastructure capacity– Other factors

Table B-3. Objective 4: Research Questions and Data Elements

Research Questions	Data Elements
Objective 4. Determine barriers and facilitators to using scanning technologies by small SNAP-authorized retailers.	
4.1a. How much do store owners/operators believe implementing these systems would cost? <i>(Respondents: all retailers)</i>	<p>General knowledge of scanning systems used to electronically scan and confirm allowable SNAP purchases (e.g., types of systems, how they operate)</p> <p>Overall understanding of costs associated with implementing, maintaining, and operating scanning systems, including costs for purchasing and installing equipment, renovating stores, training store personnel, and operating and maintaining equipment</p>
4.1b. Among small retailers that currently have scanning systems, what do they report for initial implementation and ongoing costs? <i>(Respondents: retailers that have scanning systems)</i>	<p>Cost of initial implementation of scanning system including purchase of equipment and store renovations, if any</p> <p>Cost of ongoing maintenance and operations of scanning systems (e.g., utilities, hardware upgrades)</p> <p>Availability and cost of technical personnel to support scanning system operations (e.g., maintenance and support services/contracts, expanded job role and associated cost of store personnel salaries)</p> <p>Time and cost for training store personnel, initial and ongoing</p> <p>Cost of disruption in store operations (e.g., loss of sales) during implementation</p> <p>Other costs</p>
4.2 What are the costs that retailers estimate they would be able to bear for the purchase, installation, and maintenance of scanning systems? <i>(Respondents: retailers that do not have scanning systems)</i>	<p>Estimated costs retailers anticipate they could bear for purchase and installation of scanning system, including store renovations, if anticipated (e.g., cash on hand to cover costs or would it be necessary to take out a loan to cover the cost, and if so, the ability to get a loan)</p> <p>Estimated costs retailers can afford for ongoing maintenance and operation of system</p> <p>Estimated acceptable time and cost of training personnel in use of new scanning system equipment and in system maintenance processes (e.g., database updates)</p>
4.3a. How knowledgeable are store owners and/or operators about available scanning systems? <i>(Respondents: all retailers)</i>	<p>Length of time scanning system has been operational in store (if applicable)</p> <p>Knowledge of scanning system used (if applicable)</p> <p>Reasons for selecting the scanning system in use (if applicable)</p> <p>Knowledge of available scanning systems (if not currently used)</p> <p>Availability of technical expertise to provide assistance or information about scanning systems to store owners/operators</p> <p>Sources of information store owners/operators use to obtain information regarding technology such as scanning systems (e.g., retailer associations, Web sites, vendors)</p>

(continued)

Table B-3. Objective 4: Research Questions and Data Elements (continued)

Research Questions	Data Elements
4.3b. What additional information do they [store owners/operators] require or desire in order to implement this technology? <i>(Respondents: all retailers; for retailers with scanning systems, will ask what information they believe those that do not have systems would need)</i>	Technical information about scanning systems Sources for procuring scanning equipment (e.g., vendor information) Cost information for implementation, maintenance, and operation of equipment Information regarding setting up and maintaining database on allowable SNAP items Information regarding training and monitoring of store personnel in use of scanning system Desirable formats/methods of receiving information about scanning systems
4.4 What are the perceived noncost barriers to adoption of scanning systems? <i>(Respondents: all retailers; for retailers with scanning systems, will ask about noncost barriers that they experienced or that they think are concerns of retailers that do not have systems)</i>	Infrastructure issues (e.g., telecommunications, power reliability/outages, check stand space) Personnel capacity issues (e.g., personnel capable of working with system vendor to implement and maintain scanning system) Disruption (e.g., time required for owner/operator and personnel to implement scanning system) Training personnel (e.g., scheduling/coordinating training of store personnel to use scanning equipment) Troubleshooting capacity (e.g., responding to failures in system and transacting SNAP purchases when these occur) “Hassle factor” associated with technology Other barriers
4.5 What benefits, if any, do owners/managers associate with implementing scanning systems? <i>(Respondents: all retailers; for retailers that do not have scanning systems, will ask what they have heard about benefits)</i>	Economic benefits (e.g., increased sales for SNAP and/or non-SNAP customers) “Quality control” (e.g., increased accuracy of SNAP sales, improved monitoring of store personnel) Business operation benefits (e.g., improved inventory control for product ordering and sales) Other benefits
4.6 What is the estimated number or proportion of current SNAP-authorized retailers that may not comply with this provision because of cost or other barriers and instead choose to leave SNAP? <i>(Respondents: retailers that do not have scanning systems)</i>	For retailers that indicate they will leave SNAP, key factors these retailers suggest as reasons: <ul style="list-style-type: none">– Low SNAP sales volume– Personnel challenges– Technical complexities– Store space and/or infrastructure capacity– Other factors