

# Farmers' Market Manager's Level of Communication and Influence on Electronic Benefits Transfer (EBT) Adoption at Midwest Farmers' Markets

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## ABSTRACT

**Objective:** To understand market managers' level of communication and use of technology that might influence decision to adopt Electronic Benefits Transfer (EBT) at farmers' markets.

**Design:** Cross-sectional study using the Theory of Diffusion of Innovation.

**Setting:** Electronic survey administered in midwest states of Illinois, Michigan, and Wisconsin.

**Participants:** Farmers' market managers in Illinois, Michigan, and Wisconsin.

**Main Outcome Measures:** Information on EBT adoption, market managers' communication, and technology use.

**Analysis:** Binary logistic regression analysis with EBT adoption as the dependent variable and frequency of technology use, partnership with organizations, farmers' market association (FMA) membership, Facebook page and Web site for the market, and primary source of information as independent variables. Chi-square tests and ANOVA were used to compare states and adopter categories.

**Results:** Logistic regression results showed that the odds of adopting EBT was 7.5 times higher for markets that had partnership with other organizations. Compared with non-adopters, a significantly greater number of early adopters had partnership, FMA membership, and a Facebook page and Web site for market, and reported to a board of directors.

**Conclusions and Implications:** Markets that had partnership, FMA membership, a Facebook page and Web site, and mandatory reporting to a board of directors were important factors that influenced EBT adoption at midwest farmers' markets.

**Key Words:** Electronic Benefit Transfers, farmers' market, communication behavior, diffusion of innovation, facebook, SNAP (*J Nutr Educ Behav.* 2018;50:43–50.)

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## INTRODUCTION

According to the National Farmers' Market Directory, the number of farmers' markets increased from 6,132 in 2010 to 8,526 in 2015, but only 1,788 farmers' markets (21%) accepted Supplemental Nutrition Assistance Program (SNAP) assistance through

Electronic Benefit Transfer (EBT). Nevertheless, this represents a 182% increase in SNAP redemption at farmers' markets during that period.<sup>1,2</sup> The SNAP benefits are difficult for customers and market managers to redeem at farmers' markets with the advent of EBT cards. The EBT technology involves accessing SNAP

benefits using a card similar to a credit or debit card. Markets are required to obtain authorization to accept SNAP from the Food and Nutrition Service division of the US Department of Agriculture. In addition, authorized markets need to have access to wireless devices to scan the EBT cards or process transactions manually.<sup>3,4</sup> The free EBT-only machines provided by the US Department of Agriculture require a phone line and electricity and therefore may be problematic, because farmers' markets usually operate in areas without these amenities.<sup>3,4</sup> Nationally, 3,241 farmers' market went through the process of obtaining SNAP authorization, but only 55% of those markets (1,788) currently accept SNAP, which suggests additional barriers to adoption.<sup>1,5</sup> Dissemination of SNAP benefits through EBT technology was completed nationwide in 2004, but

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limited research identified communication and technology challenges involved in adopting EBT at farmers' markets.<sup>6</sup>

There are a number of barriers to EBT adoption at farmers' markets, including communication, market structure, and funding resources. Specifically, lack of vendor compliance, the amount of paperwork, lack of resources, and complicated reimbursement processes were cited as adoption barriers.<sup>7,8</sup> In addition, farmers' market managers were often unaware that they could accept SNAP benefits. A survey of EBT adoption found that half of the farmers' markets surveyed either had not adopted SNAP benefits using EBT technology or were not aware that farmers' markets could accept them.<sup>9</sup> Effective communication among market sponsors, organizers, and managers is essential for successful implementation of EBT at farmers' markets.

The current study used Rogers' theory of Diffusion of Innovation (DOI) to understand whether a relationship existed between a farmers' market manager's level of communication and adoption of EBT at farmers' markets.<sup>10</sup> The theory of DOI addresses how an innovation is communicated through certain channels over time among members of a social system.<sup>10</sup> The innovation in this study was EBT technology and the social system was farmers' markets. Communication channels are the means by which the message about an innovation travels from 1 individual to another.<sup>10,11</sup> Market managers who adopted EBT technology at their markets in the first 3 years were considered early adopters. They usually have more social participation and exposure to interpersonal communication than do late adopters.<sup>10,12</sup> Through partnerships, farmers' market managers have greater opportunities to come into contact with early adopters, and therefore are more likely to be encouraged to adopt EBT.<sup>10</sup>

The purpose of this study was to apply the theory of DOI to understand market managers' level of communication and use of technology as it might influence their decision to adopt EBT at farmers' markets. This study identified sociodemographic characteristics and communication levels of

farmers' market managers that influenced EBT adoption. Specific objectives were to (1) examine communication differences between EBT adopters and nonadopters; (2) compare early adopters, early majority, and nonadopters based on their level of communication and technology use; and (3) investigate whether market managers' level of communication influenced the adoption of EBT technology at midwest farmers' markets.

## METHODS

The researchers conducted this cross-sectional study using the tailored design survey method collecting quantitative data from market managers.<sup>13</sup> The dependent variable was adoption of EBT (yes/no). Independent variables were demographic and socioeconomic characteristics, as well as the level of communication of market managers. The level of communication was measured using the following parameters: organizational membership, frequency of technology and social media use, and use of social media applications for the market. A convenience sample of farmers' markets managers from the midwest states of Illinois, Michigan, and Wisconsin were identified for the study. Michigan was ranked number 1 among the midwest states and fourth in the nation for having the highest number of farmers' markets. Illinois was the second and Wisconsin ranked fourth.<sup>1</sup>

The states of Illinois, Michigan, and Wisconsin all have farmers' market associations (FMAs) and all are members of the national Farmers' Market Coalition. State FMAs may have different descriptors (federation, alliance, program, etc), but they generally serve the same goal of educating and supporting their farmers' market members. In addition, each state organization may have more specific goals often found within the mission statement. Illinois FMA, for example, has the mission of educating and supporting not only the market managers but also farmers, vendors, and community food and nutrition organizations, whereas Michigan and Wisconsin have the missions to create thriving markets in support of local food and products.

The survey was administered electronically during March, 2015 to all

farmers' market managers listed on state FMAs in Illinois, Michigan, and Wisconsin. Market managers were contacted 4 times according to the Dillman<sup>13</sup> method (presurvey e-mail, survey, reminder, and thank-you note). An incentive of a 1-year membership (\$50 for Illinois and Wisconsin markets) to the corresponding state FMA or registration fee to the annual conference (\$100 for Michigan markets) was offered for participating in the study. The study was approved by the Office of Research Development and Administration at Southern Illinois University for human subject research. The survey was pilot-tested during February, 2014.

Sociodemographic questions included market managers' age, gender, total family income per year, and level of education. Questions regarding the level of communication included having state FMA membership, reporting to a board of directors, the importance of having regular communication with the FMA, having partnership with other outreach organizations (food pantries, regional food banks, local health department, etc), and the initial source of information about obtaining and using EBT at farmers' markets. Additional communication questions were asked pertaining to the frequency of using numerous technology and social media (computer/Internet, e-mail, texting, Facebook, Twitter, and Instagram). The researchers asked questions regarding whether the farmers' market managers had a Facebook page and Web site for the market.

Data were analyzed using the Statistical Package for Social Sciences (version 22, IBM SPSS Statistics for Windows, IBM Corp, Armonk, NY). Alpha was set at  $P < .05$ . The researchers used ANOVA to compare adopter categories and 3 midwest states (Illinois, Michigan, and Wisconsin) based on communication characteristics; independent sample *t* tests were used to compare the means of continuous variables. For categorical variables,  $\chi^2$  test of independence was used to report associations whereas *F* statistics were used for continuous variables to report significant differences. Binomial logistic regression analysis was used to examine effects of variables related to market managers' communication on

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