## **Examining the Influence of Price and Accessibility** on Willingness to Shop at Farmers' Markets Among Low-income Eastern North Carolina Women

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#### **ABSTRACT**

Objective: To examine the influence of farmers' market pricing and accessibility on willingness to shop at farmers' markets, among low-income women.

**Design:** Qualitative interviews using scenarios with quantitative assessment of willingness to shop at farmers' markets given certain pricing and accessibility scenarios.

Setting: Eastern North Carolina.

Participants: A total of 37 low-income women of childbearing age (18–44 years) receiving family planning services at the health department.

**Phenomenon of Interest:** Willingness to shop at a farmers' market.

**Analysis:** Fisher's exact test was used to examine associations between willingness to shop at farmers' markets by urban/rural residence, race, and employment status. Direct quotations relevant to participants' use of farmers' markets were extracted based on a positive deviance framework.

Results: Participants were increasingly willing to shop at the farmers' market when price savings increased and when the market was incrementally closer to their residence. Willingness was highest when there was at least a 20% price savings. Participants seemed to be influenced more by a visual representation of a greater quantity of produce received with the price savings rather than a quantitative representation of the money saved by the reduced price.

Conclusions and Implications: Future farmers' market interventions should take into account these consumer level preferences.

Key Words: farmers' markets, price savings, fruit and vegetable consumption, North Carolina (I Nutr Educ Behav. 2014;46:26-33.)

#### **INTRODUCTION**

Despite the health benefits associated with produce consumption, 1 most United States (US) residents fall short of recommended consumption levels, with only 26% of US adults meeting vegetable recommendations and only 34% of US adults meeting fruit recommendations as of 2009.<sup>2,3</sup> Those who are low-income commonly cite high prices and lack of accessibility as barriers to produce consumption.<sup>4-7</sup> This lack of accessibility is concerning, because residential proximity to food venues with a wide variety of

produce (eg, supermarkets and farmers' markets) has been associated with lower body mass index<sup>8,9</sup> as well as fruit and vegetable consumption among lower income consumers. 10 Taken together, research suggests that when fruits and vegetables are less costly and more accessible, individuals are more likely to purchase and consume them. 11-14

Farmer-to-consumer direct marketing of produce via farmers' markets, produce stands, or pick-your-own farms is posited as an important strategy to promote produce consumption among low-income consumers who live in areas with low produce accessibility. 15,16 These suggested strategies are driven by the expectation that farmers' market produce may cost than produce found traditional food venues. For example, a California study<sup>17</sup> found a 34% overall price savings between produce

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purchased at farmers' markets vs the average price of produce at proximal supermarkets. A North Carolina study<sup>18</sup> found an 18% overall price savings between produce at farmers' markets vs nearby supermarkets. Finally, consumers given vouchers for produce at a farmers' market bought more fruits and vegetables than consumers given vouchers for produce at a supermarket,<sup>19</sup> which suggests that consumers may prefer produce purchased at farmers' markets vs produce from supermarkets.

There is little published literature to document the direct relationship between shopping at farmers markets and increased fruit and vegetable consumption, although some evidence exists for effectiveness. A study by Kaiser Permanente<sup>20</sup> demonstrated increased fruit and vegetable consumption in patrons of worksite farmers markets. Two Special Supplemental Nutrition Program Women, Infants, and Children (WIC) Farmers' Market Nutrition Program (FMNP)-related studies have demonstrated increased fruit and vegetable consumption with participants given farmers market coupons. 19,21 Evans et al<sup>22</sup> found that introduction of farmers' markets in low-income areas increased fruit and vegetable consumption among community residents.

Low-income consumers tend to shop at farmers' markets less frequently than their higher-income counterparts, citing higher perceived price and limited access as barriers.<sup>23</sup> In terms of consumer proximity to farmers' markets, 1 study reported a range of 6-17 miles distance from consumers' homes to the farmers' market,<sup>24</sup> and another study reported that customers traveled 17-18 minutes to reach the farmers' market.<sup>25</sup> Little research has been conducted from a public health perspective to examine price savings or accessibility thresholds that are needed to motivate low-income consumers to patronize farmers' markets. This information is necessary because new federal public health initiatives are promoting direct marketing opportunities such as farmers' market in an effort to increase access, availability, and consumption of fruits and vegetables. Therefore, the joint association of potential farmers' market price savings and increased accessibility of farmers' markets on willingness to shop at farmers' markets was examined among low-income women in eastern North Carolina.

#### **METHODS**

### Theoretical Background

A method similar to an econometric technique known as "contingent valuation" was used for the purpose of understanding consumers' "stated preference" for shopping at the farmers' market, given particular price and accessibility conditions.<sup>26</sup>

#### **Study Participants**

This study was ancillary to the Integrated Screening and Health Assessment, Prevention and Evaluation (InShape) Study to examine cardiovascular disease risk factor prevalence among low-income women of childbearing age (18-44 years) receiving family planning services at the Pitt County Health Department Title X family planning clinic. Pitt County (population 171,134)<sup>27</sup> is located in North Carolina, with Greenville (population 84,554)<sup>28</sup> as its major city. Upon InShape enrollment, women were asked to participate further in a qualitative study investigating food shopping patterns. Participants were selected based on indicating interest on the InShape Study screening questionnaire. The study staff attempted to have equal representation of race, employment status, and rural/urban residence. Upon agreeing to participate, a meeting time and location were established to conduct the study interview. During the meeting, participants were informed of all aspects of the study and were offered a chance to ask questions. The East Carolina University Institutional Review Board approved this study and all participants provided written informed consent.

### In-depth Interviews

In-depth, qualitative interview scripts were developed through expert consensus of the research team, with revisions made after pilot testing. Two trained interviewers (J.M. and S.J.P.)

conducted interviews with 37 women enrolled in the InShape Study. Interviews lasted between 45 and 60 minutes, and participants were compensated \$20 for their time. Questions assessed their food purchasing activity space to capture geographic patterns of their normal food shopping patterns and their use of food venues such as supermarkets, restaurants, and farmers' markets. As a part of the interview, participants were asked to complete a "contingent valuation" exercise, in which they were given a visual representation of different price and accessibility scenarios measuring their willingness to shop at a farmers' market compared with a supermarket. The visual price and accessibility scenarios assessed the price for the same market basket of produce at a farmers' market vs a supermarket, and an indicator of access or time required driving to a farmers' market vs a supermarket. The same research staff who conducted the interviews (J.M.) audio recorded and transcribed in-depth interviews verbatim for analysis.

*Price scenarios*. To examine how price savings may facilitate farmers' market use, the farmers' market was assumed to confer a price savings, which is consistent with the majority of previous research, <sup>17,18,29</sup> including a research study in the same area where the interviews were conducted that found a price savings at farmers markets compared with supermarkets. <sup>18</sup> Percentage price savings (5%, 10%, 20%, 30%, and 40%) were presented visually as discounts from a standard amount of \$8, a realistic amount to be provided at the beginning of the market season by the WIC FMNP.

Scenarios were presented to examine how 2 different stimuli (discounted price [price] and increased produce quantity [amounts]) might influence participants' willingness to shop at farmers' markets. The first stimulus price was the actual price (dollar amount) that the consumer would pay at the farmers' market vs the supermarket for the same market basket of produce, given particular percent discounts at the farmers' market. For example, the 20% discount visually displayed the market basket priced at \$6.40 at the farmers' market vs \$8 at the supermarket.

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