Does E-Commerce Help Farmers' Markets?
Measuring the Impact of MarketMaker

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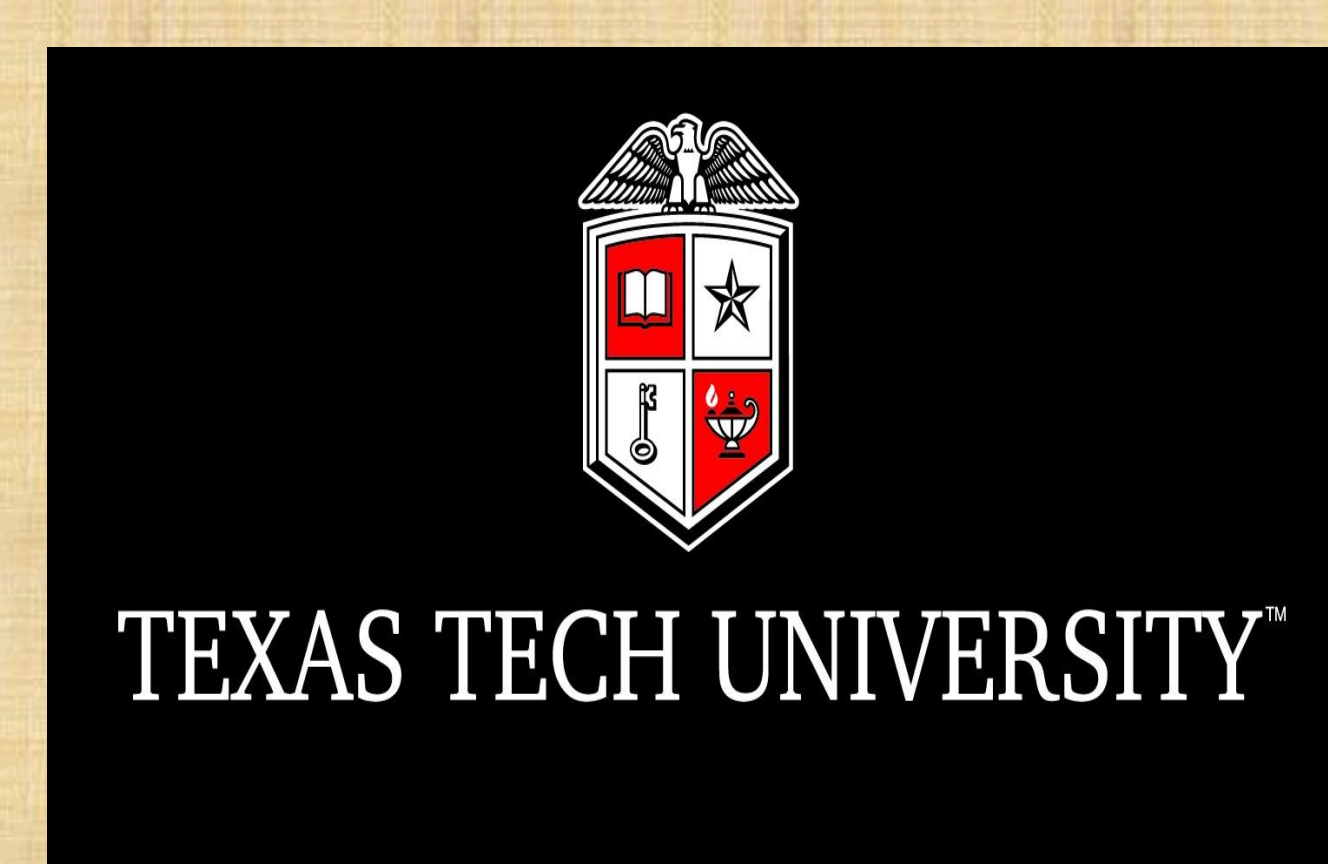
Does E-Commerce Help Farmers' Markets? Measuring the Impact of MarketMaker

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Introduction

- Given its demonstrated impact in industrial retail markets, e-commerce is also believed to have the potential to increase the profitability of businesses in agricultural markets by increasing sales, as well as decreasing costs through greater efficiency of the operations.
- An interesting aspect of the development of e-commerce in agriculture that has not been analyzed in the previous literature is the impact of e-commerce on conventional types of direct marketing, such as farmers' markets.
- E-commerce may have a substitute or complementary relationship with other direct marketing outlets, such as farmers' markets.

Objective

The goal of this study was to explore the relationship between e-commerce and direct marketing venues through examination of the impact of the electronic trade platform MarketMaker (MM) on farmers' markets.

MarketMaker

- MarketMaker is one of the most extensive collections of electronic searchable food industry related data engines in the country (Figure 1).
- The MarketMaker website is used by farmers' markets as a free marketing tool that helps identifying new customers and provides potential clientele with detailed information about their product portfolio, geographic location and contact information.
- Today, the site is operating in 18 states throughout the country with over 17,500 profiles – including 1,295 farmers' markets– and receives about 1 million hits per month.

Figure 1. National MarketMaker Presence

Live MarketMaker Sites
In-Progress MarketMaker Sites

Source: MM Portal
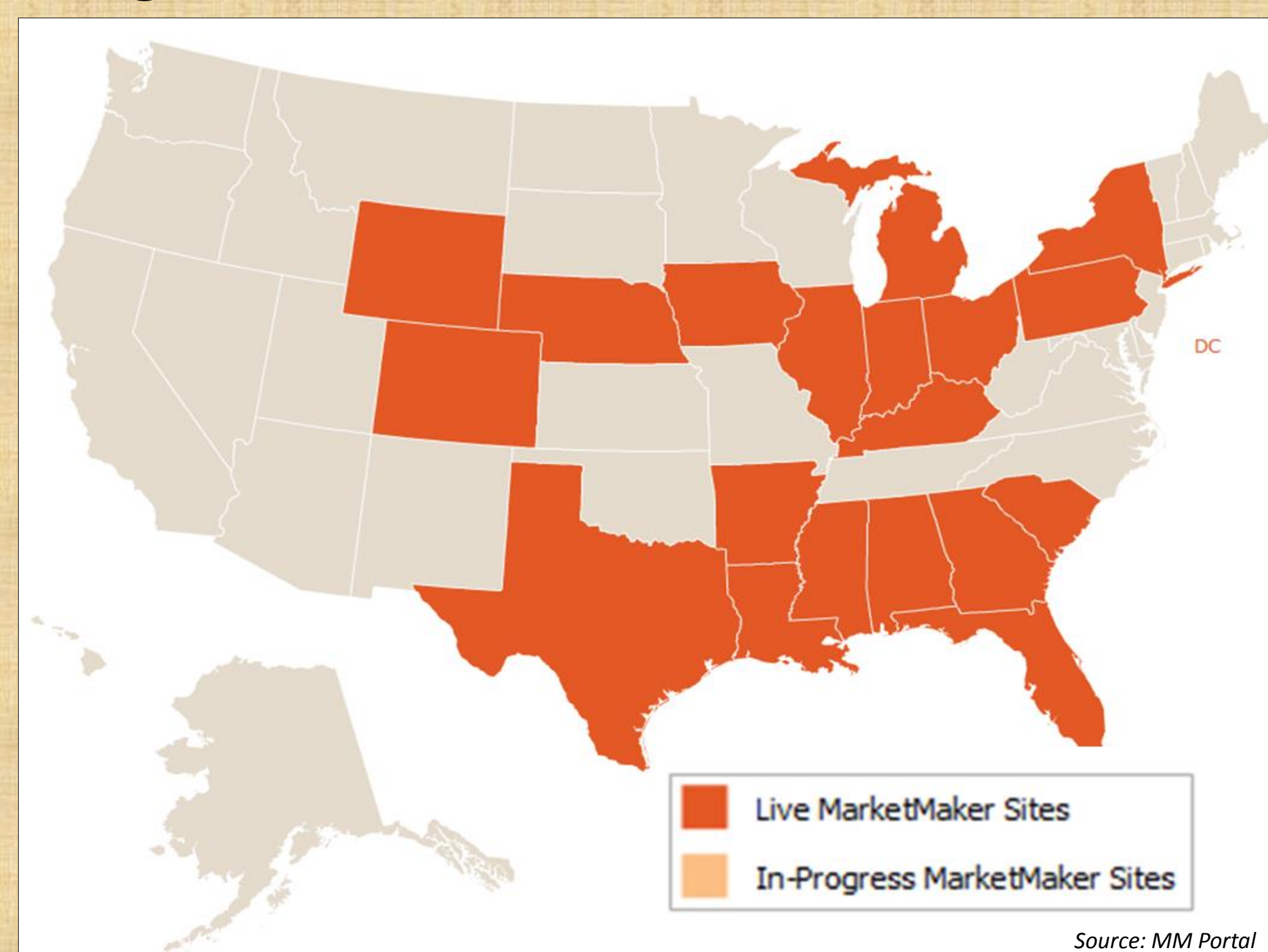
Farmers' Markets' Use of MarketMaker

- A survey was developed based on a logic model which describes the relationship between MarketMaker and farmers' markets.
- Email surveys were distributed to 1,295 farmers' market managers registered on MarketMaker in 15 participant states: AR, CO, FL, GA, IL, IN, IA, LA, MI, MS, NE, NY, OH, SC, and Washington, DC. The overall response rate of the survey was 10.2 % and it generated 132 usable observations.
- Since most of the data was collected using a discrete number of categories to simplify the response, parametric (Stewart, 1983; Bhat, 1994) and nonparametric methods (Turnbull, 1976; Day, 2007) are used to estimate the average values of the variables (Table 1).
- As a result of their participation with MarketMaker, farmers' markets managers have been contacted, on average, about 1.5 times by customers and vendors, obtained an average of 0.8 new vendors and 1.9 new customers. The average annual increase in sales due to participation in MarketMaker was estimated at about 3.6 percent, or $4,889 per farmers' market.

Table 1. Characteristics and Perceptions of Respondents

Variable Name (Units)	Category	Category Proportion / Total	Mean — Nonparametric lower and upper bounds	Mean — Parametric (Standard Deviation)
Panel A: Characteristics				
Registration type	1= Self-registered	65.75		
	0 = Otherwise	34.25		
Years of operation	Less than 2	7.69	(6.43, 12.43)	8.54 (6.03)
	2 to 3	14.42		
	3 to 4	12.50		
	4 to 10	29.81		
	10 to 15	15.38		
	More than 15	20.19		
Total annual sales ($1,000)	Less than $10	29.90	(97.63, 214.84)	135.82 (236.39)
	$10 to $50	27.84		
	$50 to $100	12.37		
	$100 to $250	16.49		
	$250 to $500	6.19		
	$500 to $1,000	3.09		
	Over $1,000	4.12		
Type of user	1= Active	33.04		0.33 (0.47)
	0 = Passive	66.96		
Time registered on MM (Months)	Less than 1	4.29	(14.32, 24.81)	18.84 (13.06)
	1 to 6	18.57		
	7 to 12	11.43		
	13 to 24	34.29		
	25 to 36	20.00		
	37 to 48	8.57		
	Over 48	2.86		
Time spent on MM activities (Min/month)	Less than 30	76.81	(30.88, 85.75)	50.04 (116.26)
	30 to 60	13.04		
	61 to 120	2.90		
	121 to 300	2.90		
	301 to 600	1.45		
	Over 600	2.90		
Panel B: Perceived Impacts				
New Marketing contacts	0	69.33	(0.77, 2.13)	1.45 (3.02)
	1 to 5	24.00		
	6 to 10	4.00		
	11 to 20	2.67		
New vendors	0	76.40	(0.42, 1.21)	0.81 (1.76)
	1 to 4	19.10		
	5 to 10	4.49		
New buyers	0	63.41	(1.22, 5.00)	1.86 (4.13)
	1 to 10	31.71		
	11 to 25	2.44		
	25 to 50	2.44		
Increase in Annual Sales (%)	No increase (0%)	42.86	(0.72, 6.42)	3.57 (4.01)
	1% to 10%	50.00		
	11% to 19%	7.14		
Overall Satisfaction	Very satisfied	8.22		
	Satisfied	28.77		
	Neutral	60.27		
	Dissatisfied	1.37		
	Very dissatisfied	1.37		

[a] Marketing contacts refer to the total contacts received since the farmers' market became registered on the MarketMaker website.

- Farmers' market managers report various degrees of intensity with respect to the use of MarketMaker features. The features that are most commonly used are the "log on to check or update profile" (22% of users), and "search for new vendors" (23%). Less commonly used features include "search for products" which was used sometimes or frequently by about 19 percent of users, and "reach out to customers" (14%).

The Impact of MarketMaker on Farmers' Market Sales

- The impact is analyzed using an interval-censored logistic regression (Bhat, 1994) to estimate which factors help increase annual sales attributed to MarketMaker.
- The findings identify the components needed for a more successful use of MarketMaker by farmers' markets: an established MarketMaker program , an established farmers' market and a manager that is an active user of the site (Table 2).
- These findings demonstrate the track record in the states with the longer presence of MarketMaker and demonstrate program potential for new users.
- The fact that more established farmers' markets are able to achieve higher increase in sales than the new ones suggests that MarketMaker is more effective in expanding existing, rather than helping create new capacity.
- Higher sales among more active users indicates that in order to see the impact of MarketMaker on their operation, users have to invest time and effort in making the program work for them.

Table 2. Interval-Censored Analysis of the Factors Affecting Farmers' Market Sales Attributed to MarketMaker

Variable	Coefficient[a]	Standard error	P-value
Constant	-4.222	4.331	0.330
Region (South=1, Mid-West=0)	0.109	2.090	0.959
Years in operation (Less than 4 years=0, more than 4 years=1)	3.213 *[b]	1.849	0.082
Total sales (less than $50,000=0, more than $50,000=1)	1.790 **	1.807	0.322
Type of user (Active=1, Passive=0)	6.669 ***	1.986	0.001
Manager gender (Female=1, Male=0)	-0.869	1.637	0.603
Manager age (years)	-0.048	0.057	0.400
Years of MM presence in the state	0.934 *	0.512	0.068
σ[c]	4.743 ***	0.812	0.000

[a] Dependent variable is percentage increase (in intervals) in sales attributed to MarketMaker. The coefficients can be interpreted as marginal effects.
[b] Significance levels of 0.01, 0.05 and 0.10 are indicated by ***, ** and * respectively.
[c] The parametric procedure assumes that the increase in annual sales follows a normal distribution, hence σ is the standard deviation.

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