

Technology Policy Institute

From the Selected Works of Scott J. Wallsten

June, 2014

Social Media and Entrepreneurship: The Case of Food Trucks

Scott J. Wallsten

Corwin Rhyan, *Technology Policy Institute*



Available at: https://works.bepress.com/scott_wallsten/83/

Social Media and Entrepreneurship: The Case of Food Trucks

June 2014

Scott Wallsten and Corwin Rhyan

Social Media and Entrepreneurship: The Case of Food Trucks

Scott Wallsten and Corwin Rhyan*

May 28, 2014

Abstract

While the use of social media by firms is nearly ubiquitous, there has been little analysis of its effectiveness in helping small businesses succeed in a highly competitive market. To begin studying this question, we created an extensive dataset on over 250 mobile food trucks—a dynamic, somewhat homogenous, and low-entry cost business that is highly dependent on social media for its business model—which operated in the Washington, DC metro area from 2009 to 2013. We explore how their use of social media and Internet services like Twitter, Facebook, and business webpages effect their ability to stay in business. We find that trucks with a Facebook page and website have a higher likelihood of staying in business longer, and trucks that send around two tweets a day are more likely to stay in business than those who send fewer. Trucks tweeting more than twice a day, however, do not show an increase in longevity. Additionally, the number of reviews a truck receives—almost certainly an indicator of demand—is correlated with its ability to stay in business but the average review score itself is not correlated with a truck’s likelihood of staying open.

* Wallsten is a Senior Fellow and Vice President for Research, Technology Policy Institute. Contact scott@wallsten.net. Rhyan is a research associate at the Technology Policy Institute. Any opinions expressed in this paper are the authors’ alone and do not necessarily reflect the opinions of anyone else at TPI or its board. We thank Tom Lenard and Amy Smorodin for useful comments, but all mistakes are our own.

Introduction

Social media, especially Twitter and Facebook, are among the most popular uses of the Internet and, increasingly, a tool for businesses to connect with customers. As one magazine effused, “Smart businesses know that social media is a power to be reckoned with, as it creates a direct line of communication between your company and consumers and allows anyone with an internet connection instant access to the latest buzz around your products or services. Not to mention, it can help you to generate revenue, while building your brand presence.”¹

Social media sites are attractive to businesses and other organizations because of their large networks, but may be especially enticing to entrepreneurs given the low cost of using the platforms. But does social media, in fact, help entrepreneurs succeed? This paper focuses on social media use by the relatively new food truck industry. Social media use of food truck owners is unique from other businesses because of the mobile nature of the industry, and Twitter, Facebook and other tools provides a way to broadcast their location.

We assemble a dataset on every food truck in the Washington, DC area, including information on entry, exit, cuisine sold, and use of Internet and social media tools including Twitter, Facebook, and websites. These data make it possible to undertake survival analysis of the trucks to determine which tools might affect the ability to stay in business. For example, in principle, how a truck uses Twitter may or may not be a crucial factor in its success. On the one hand, fans of a particular truck may wish to seek it out at lunchtime, and Twitter is an excellent platform for the truck to broadcast its location. And at least one food truck “tracker”—Food Truck Fiesta—aggregates tweets to map real-time location of the trucks. After all, if you’re jonesing for a mid-day cupcake fix you need to know where to find the Cupcake Truck. Alternately, perhaps would-be diners simply saunter to the nearest cluster of food trucks and choose among the trucks at that spot. The effectiveness of social media for food trucks is, therefore, an empirical question, and one that we attempt to answer here.

An advantage of studying food trucks is that their costs are nearly identical—they almost all use the same type of truck with the same modifications, follow the same rules and regulations within any given jurisdiction, and compete in (and for) the same locations. The food truck industry also has relatively low costs of entry and exit when compared to traditional brick and mortar restaurants, which creates a dynamic environment with very high turnover of new trucks in the DC area.

Regulations and Business Environment

At one time, food trucks, or “roach coaches” as they were called,² were simply mobile canteens that brought food to sell to construction sites or other places where laborers gathered for lunch.³ Since around 2008, however, food trucks have become more widespread, offering myriad types

¹ Stephanie Castillo, “14 Tools Every Entrepreneur Needs for Managing Social Media,” *Entrepreneur*, February 28, 2014, <http://www.entrepreneur.com/article/231851>.

² <http://dictionary.reference.com/browse/roach-coach>

³ See Hermosillo (2012) for an interesting examination of *Loncheras* in Los Angeles. Jesus Alberto Hermosillo, “Loncheras: A Look at the Stationary Food Trucks of Los Angeles” (University of California, Los Angeles, 2012).

of cuisine, ranging from grilled cheese to lobster, and catering to office workers in urban areas.⁴ By one estimate, total revenues of food trucks across the country were \$630 million in 2011⁵ and a billion dollars by 2012.⁶

In DC, food trucks are subject to health and food safety requirements similar to traditional restaurants.⁷ Food preparation must generally take place in a commercial kitchen, in which a truck owner typically leases space. The trucks must also meet restrictions on size and their owners need proper licenses to operate on the streets of DC.⁸ Finally, mobile kitchens must be inspected annually and meet many of the same sanitary and fire safety requirements of traditional kitchens.⁹ In addition, the trucks pay a sales tax if they exceed the city's threshold for goods sold.

Earlier regulations posed a major barrier to food truck entry.¹⁰ Trucks operating in the downtown business centers of DC generally fell under regulations intended for “ice cream trucks” and similar mobile vendors that catered to tourists around DC's museums and monuments.¹¹ The rules allowed trucks to stop only where a line had already formed or where a specific customer hailed them.¹² Those rules could not work for trucks that picked a location and waited for customers to arrive. Traditional brick-and-mortar restaurants, however, did not want those rules to change due to the increased competition the trucks would bring. A regulatory debate thus began in 2010 and continued until 2013 when new regulations were finally implemented.¹³

The first proposal to update regulations in 2012 would have established a few “mobile roadway vending locations” that severely restricted where trucks could legally sell their food and a lottery system to allocate the limited number of spots at these prime vending locations.¹⁴ Vending locations would be legal only if they had minimum sidewalk widths of 10 feet, while those who had not won a spot in the lottery had to operate at least 500 feet from the reserved zones. Trucks that let their metered time expire faced fines of up to \$2000. The final rules were more generous. In a compromise with the Food Truck Association, the limits were lowered to six feet and 200

⁴ Stephanie Buck, “The Rise of the Social Food Truck [INFOGRAPHIC],” *Mashable*, August 4, 2011, <http://mashable.com/2011/08/04/food-truck-history-infographic/>.

⁵ Geoff Dougherty, “Chicago's Food Trucks: Wrapped in Red Tape,” *Gastronomica: The Journal of Food and Culture* 12, no. 1 (May 2012): 62–65, doi:10.1525/GFC.2012.12.1.62.

⁶ <http://www.ibisworld.com/industry/default.aspx?indid=1683>. I do not have any way of verifying the accuracy of the 2012 estimate or the one cited for 2011 (fn 5).

⁷ D.C. Municipal Regulations on Vendors. at Rule Number 24-555

⁸ D.C. Municipal Regulations on Vendors at Rule Number 24-546

⁹ D.C. Municipal Regulations on Vendors at Rule Number 24-556

¹⁰ Regulatory barriers to food truck entry are, of course, not unique to Washington, DC. Dougherty (2012) discusses this issue in Chicago, and Morales and Kettles (2009) discuss the difficulties more broadly of selling food in non-traditional ways, including from food trucks, across the country and through history. Dougherty, “Chicago's Food Trucks”; Alfonso Morales and Gregg Kettles, “Healthy Food Outside: Farmers' Markets, Taco Trucks, and Sidewalk Fruit Vendors,” *Journal of Contemporary Health Law and Policy* 26, no. 29 (2009): 20–48.

¹¹ Jacques Arsenault, “DC Council Empowers Itself to Tweak Food Truck Regulations,” *DCist*, June 4, 2013, http://dcist.com/2013/06/dc_council_empowers_itself_to_tweak.php.

¹² See previous D.C. Municipal Regulations, Section 556

¹³ Jessica Sidman, “Food Truck Rules Pass DC Council,” *Washington City Paper*, June 18, 2013, <http://www.washingtoncitypaper.com/blogs/youngandhungry/2013/06/18/food-truck-rules-pass-d-c-council/>.

¹⁴ Benjamin R. Freed, “Food Truck Group Raising Money for Publicity Campaign,” *DCist*, April 2, 2013, http://dcist.com/2013/04/food_truck_group_raising_money_for.php.

feet,¹⁵ and the maximum fine for letting metered time expire was lowered to \$50.¹⁶ These regulations were passed in June 2013, and the first month of exclusive zones and the lottery system was December 2013.

It is too soon to know the effects of these rules on food trucks or the broader lunch-time food market. The lottery system, especially, may affect the nature of the food truck market. On the one hand, lottery winners will be happy and, in principle, it puts all the trucks on a level playing field. On the other hand, the rules could make entry by new food trucks more difficult. Before the lottery system an entrepreneur could exert extra effort to arrive earlier than others and secure a popular spot to introduce people to his food. That is no longer possible. Additionally, as a society we do not generally allocate scarce resources—good business locations, in this case—by lottery. Arguably, some market-based allocation system would be more efficient.

Data

We assemble a dataset of all food trucks that entered and exited the metro area Washington, DC market from 2009 through 2013. In addition to providing a detailed statistical look at the evolution of this market over time, it allows us to use survival analysis to determine what helps food trucks survive in the market.

Our dataset comes from a number of sources. The list of food trucks in the DC area comes from foodtruckfiesta.com, which aggregates food truck Twitter feeds and keeps a list of all trucks with active Twitter accounts. We used the Internet Archive to view older lists from the site and obtain information on trucks that have exited the market. We then gathered information on each truck, including the type of cuisine it sells, the date it entered the market, the date it exited (if it did), the jurisdictions in which it operates, and prices of its menu items over time.

Table 1 shows the number of food trucks in the dataset by jurisdiction and type of cuisine. The table demonstrates that the largest number of food trucks operate in DC proper, followed by Arlington, Montgomery County, and Fairfax. “American” food is the most popular by far, followed by dessert trucks. Table 2 shows the types of food in each larger cuisine group.

¹⁵ Ted Eyton, “Our Long, Legislative Food Truck Nightmare Is Basically Over,” *DCist*, June 18, 2014, http://dcist.com/2013/06/our_long_legislative_food_truck_nig.php.

¹⁶ *Id.*

Table 1: Number of Food Trucks by Jurisdiction and Cuisine

Jurisdiction	Cuisine Type						Total
	North American	East Asian	European	Latin American	West Asian	Dessert	
Arlington	11	5	1	8	1	10	36
DC	64	21	14	23	20	20	162
Fairfax	12	3	3	3	2		23
Fredericksburg	1						1
Loudoun	4	1	2				7
Montgomery	18	1	1	3	1	7	31
Prince George's	2						2
Total	112	31	21	37	24	37	262

Note: The table shows the number of trucks in the dataset, not the number of trucks operating at any given point in time.

Table 2: Types of Food in Each Cuisine

North American		Latin American		East Asian		West Asian		European		Dessert	
Type	Count	Type	Count	Type	Count	Type	Count	Type	Count	Type	Count
American	47	Brazilian	1	Pho	6	Halal	5	Crepes	6	Coffee	1
BBQ	11	Caribbean	2	Asian	5	Indian	3	Eastern European	1	Crepes	4
Sandwiches	10	Cuban	1	Korean	5	Kabobs	3	German	1	Dessert	38
Southern	7	Empanadas	1	Korean BBQ	4	Lebanese	3	Greek	3	Drinks	1
Soul Food	4	International	2	Sushi	2	Turkish	2	Italian	3	Juice	1
Burgers	3	Jamaican	3	Vietnamese	2	Falafel	1	Mediterranean	11		
Crab	3	Latin	3	Asian Fusion	1	Middle Eastern	1	Subs	1		
Pasta	3	Mexican	13	Banh Mi	1	West Indian	1				
Vegetarian	3	Peruvian	2	Dumplings	1	Ethiopian ¹⁷	5				
Hot Dogs	2	Puerto Rican	1	Egg Rolls	1						
Meatballs	2	Spanish	1	Indonesian	1						
Paninis	2	Tacos	6	Korean-Fusion	1						
Pizza	2	Tapas	1	Thai	1						
Seafood	2	Tex-Mex	2								
Subs	2										

Note: Other North American offerings with only 1 count include: Cajun, Cheesesteaks, Chicken, Global, Lobster, Pies, Poutine, Wings, and Wraps

¹⁷ Ethiopia, of course, is not part of “West Asia,” but it seemed to fit in this category better than in any other.

Table 3 shows the mean extent of Internet marketing by food trucks in metro DC. More than half have Facebook pages and slightly fewer than half have their own websites. Every truck except one (the Philadelphia Cheesesteak Express) is currently on Twitter, and sends about 2.5 tweets per day, on average.

Table 3: Social Media / Internet Use Variable Summary Statistics

Variable	Mean
Has a Facebook page	0.54
Number of "Likes" if have FB page	951
Has own website	0.48
Number of Twitter followers	1709
Tweets per day	2.55
Number of reviews (foodtruckfiesta.com)	4.32
Review stars	3.85

Trucks differentiate almost exclusively on the type of food they offer, with little evidence of price competition. Table 4 shows the relative uniformity of prices across cuisines—lunch costs about eight bucks, not including a drink, and dessert will set you back about \$3.80.¹⁸

Table 4: Prices by Cuisine

Cuisine	Mean (\$)	Median (\$)	Standard Deviation (\$)
East Asian	8.84	8.00	1.45
Latin American	8.23	8.00	1.53
North American	8.19	8.00	2.08
West Asian	8.11	8.00	1.20
European	7.97	8.00	1.97
Dessert	3.80	3.00	1.30

A multivariate regression with price as the dependent variable highlights other factors that affect price. Table 5 shows the results of this analysis. Competition, as defined by other trucks offering the same specific type of food, is correlated with (very slightly) lower prices: each additional truck offering the same food is associated with a \$0.03 price decrease. Prices are higher in DC and in Montgomery County than elsewhere in the region. Dessert is the least expensive type of food, ranging from \$3.75 - \$4.70 less than lunch entrees.

¹⁸ The prices were gathered by looking up menus posted on the foodtruckfiesta.com website. While many trucks have only a few meal offerings and identical prices, in cases where a truck had many offerings, the price reflects the top-line item of a “meal” offering usually a main course in addition to a side, but not including a drink. A major exception is the Lobster Truck, which charges \$15, presumably reflecting the high cost of lobster relative to, say, falafel.

Table 5: Price Regression Results

Variable	Coefficient (t-stat)
Number of trucks in region with same type of (narrow) cuisine	-0.029* (-1.762)
Also has brick-and-mortar store	-0.078 (-0.18)
	1.03*** (2.99)
	0.49 (0.99)
Region (Arlington is the omitted category)	0.072 (0.089)
	1.75*** (3.67)
	1.40 (0.77)
	4.70*** (8.36)
	3.74*** (6.30)
Cuisine (Dessert is the omitted category)	4.02*** (7.34)
	4.07*** (9.30)
	3.74*** (6.27)
Days Open	-0.00049 (-1.36)
Constant	3.68*** (6.26)
Observations	203
R-squared	0.46
t-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Figure 1 shows truck survival rates by jurisdiction. Trucks appear least likely to remain in business in Arlington and most likely in Fairfax. Trucks in DC and Montgomery County show similar propensities to remain in business by the end of the observed time, but trucks are more likely to survive in Montgomery County between 15 and 35 months after opening.

Figure 1: Survival Rate by Region

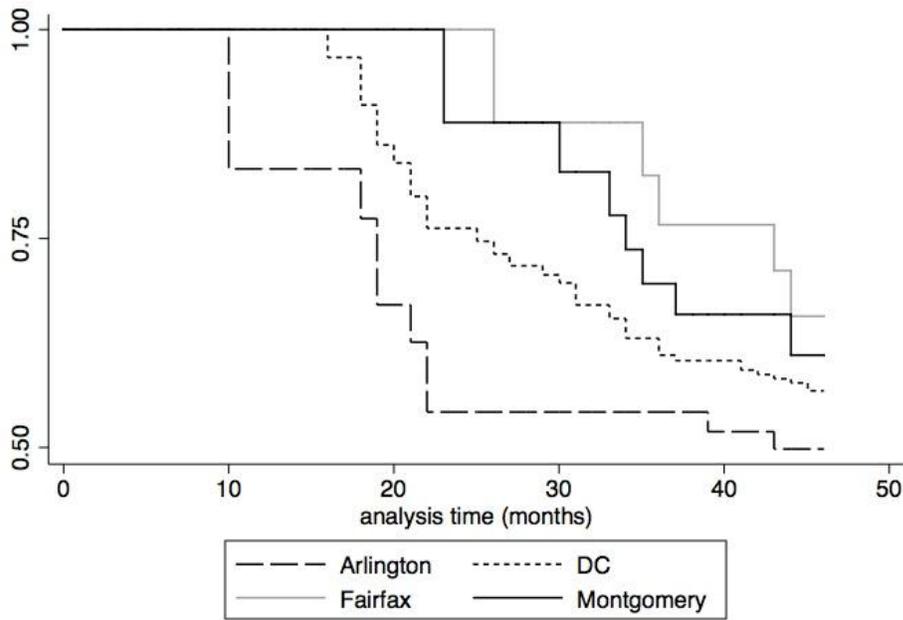


Figure 2 shows survival rates by cuisine. Trucks offering Latin American and dessert food are the least likely to stay in business, while trucks selling West Asian and European food are most likely to remain operating.

Figure 2: Survival Rate by Cuisine

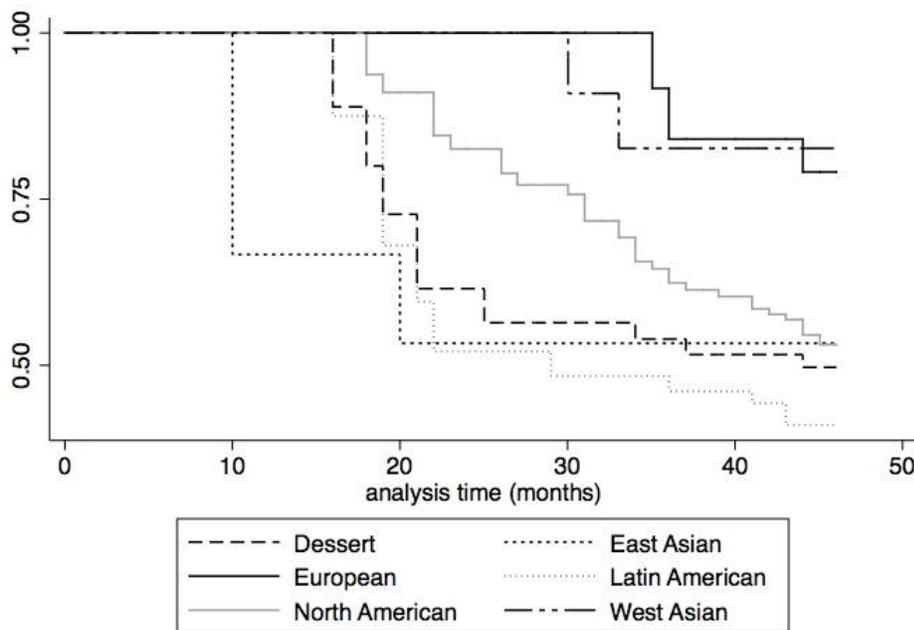
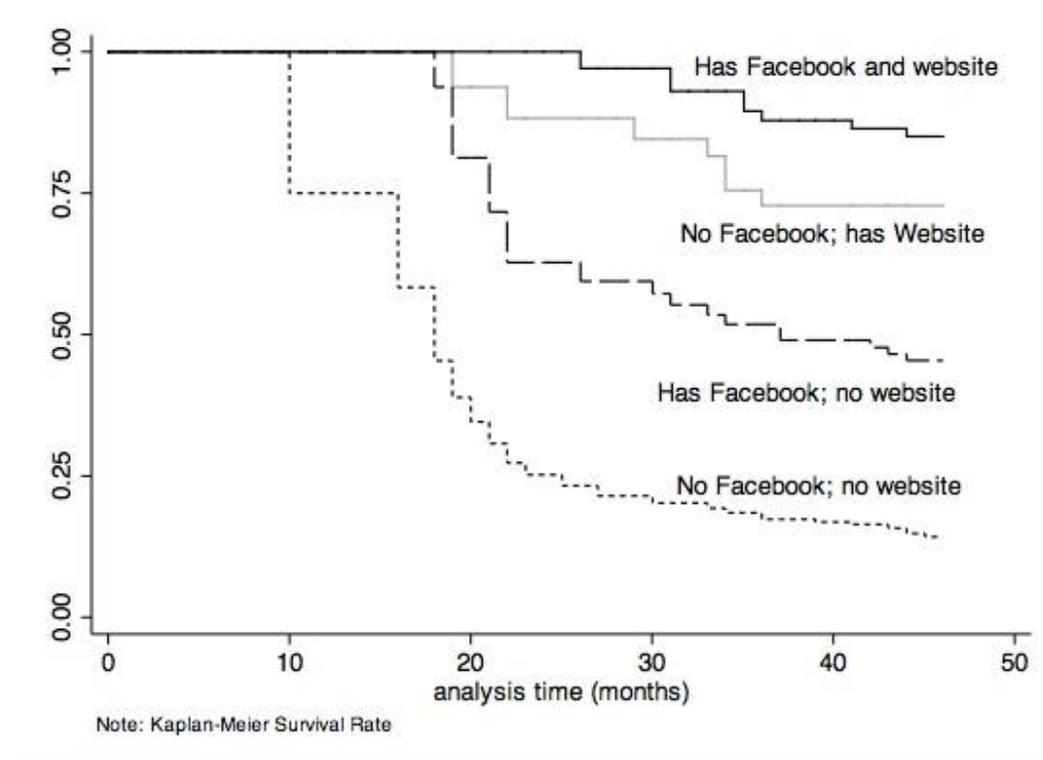


Figure 3 shows that trucks with both a Facebook page and a website are the most likely to stay in business over the period of time observed. Trucks, however, do not randomly decide whether to have a Facebook page or set up a website. It is possible that the advertising effects of the Internet are responsible for helping trucks stay in business, but it is also possible that having a Facebook page and a website simply indicate owners who put more overall effort into their trucks. Indeed, Figure may be more consistent with the effort proxy hypothesis. Note that trucks with a website but no Facebook are more likely to stay in business than trucks with Facebook but no website. Given that it takes more effort to make one's own website than to create a Facebook page, it seems likely that the website indicator, at least, proxies for effort.

Figure 3: Survival Rates by Whether Truck Has Facebook and Website



The parametric survival models do not allow us to separate effort from possible effort proxies like Facebook, but they do allow us to control for more characteristics simultaneously and investigate the correlations with continuous as well as indicator variables.

Table 6 shows the results of maximum likelihood estimation.¹⁹ The coefficients of a survival analysis represent the change in likelihood that a truck experiences exits the market. Therefore, a negative coefficient implies that when the variable increases the chances of exiting the market decreases, and vice-versa.

The Facebook and website results are identical to the figures above, even when controlling for the type of cuisine and the jurisdiction in which the truck operates. In other words, have a

¹⁹ A few trucks have sent thousands of tweets. We topcode the sample by ignoring trucks above the 99th percentile in number of tweets per day (99th percentile is 29 tweets per day).

Facebook page and a website are significantly correlated with staying in business longer. Other variables, however, yield further insights.

First, some activity on Twitter is good, but actively tweeting does not necessarily yield better outcomes. In particular, the number of tweets per workday—a continuous variable—is not statistically correlated with staying in business or failing.²⁰ Trucks that tweet approximately once each workday are less likely to fail, but that relationship is not statistically significant at conventional levels. Trucks that tweet about twice per workday generally appear statistically more significant to stay in business. More than two tweets per workday is not correlated with success or failure.

This set of results is consistent with at least two nonexclusive hypotheses. The first interpretation supports the hypothesis that customers need to know where you are—two tweets per day seems useful to tell fans where you are and whether you move or run out of food for the day. Additional tweeting, however, does not appear to serve a useful purpose, at least in terms of staying in business. The second interpretation is that failing to tweet every day is an indicator, rather than a cause, of a failing business—the truck owner does not tweet every day because he cannot manage to open for business regularly.

The earlier a truck establishes its Twitter account relative to starting actual operations, the more likely the truck is to fail. While starting to tweet some time before starting may be a good idea, we suspect that our result is capturing trucks that had problems starting actual operations, therefore opening long after the owners expected, and that these trucks are also more likely to be ones that have problems throughout their lives.

The number of Food Truck Fiesta reviews correlates with staying in business longer. Some evidence suggests that the number of Twitter followers is also correlated with staying in business longer, but that result is not robust to different model specifications. Neither result, of course, is surprising since the number of reviews (or followers) almost certainly proxies for demand.

More interesting, however, is that the average review score itself seems unrelated to whether a truck stays in business. As evidenced by lawsuits filed some business owners against people who leave bad Yelp reviews, at least some people believe that bad reviews are bad for business.²¹ But these results, however, suggest that perhaps, as P.T. Barnum supposedly said, there is no such thing as bad publicity.

²⁰ Defining the “tweets per day” variables was not straightforward. Simply dividing the total number of tweets by the number of days the truck was operating seems incorrect since the five days of the typical workweek are likely to be more important than the two weekend days. Tweets per workday, therefore, is [(number of tweets)/((days operating)*(5/7))]. This transformation is, of course, irrelevant for the continuous variable since it simply multiplies each observation by the same constant. It does, however, allow us to create what we believe to be more meaningful indicator variables: one tweet per workday, two tweets per workday, and multiple tweets per workday (we exclude the implied less than one tweet per workday indicator). Very few trucks have an integer average of tweets per day, so we define ranges that we consider “one per workday,” and so on. In particular, if the truck’s average tweets per workday is larger than 0.6 and less than 1.4 we consider it to be one, from 1.4 to less than 2.4 is two, and greater than or equal to 2.4 is “multiple.” We wish these divisions were not arbitrary, but they are.

²¹ For example, http://www.washingtonpost.com/local/crime/750k-lawsuit-over-yelp-review-will-go-to-trial/2014/01/26/63e9d372-8539-11e3-8099-9181471f7aaf_story.html.

Table 6: Social Media Survival Parametric Estimates

	Has a Facebook Page	-0.85** (-3.14)		-0.61* (-2.23)		-0.54+ (-1.86)				-0.64* (-2.30)	-0.66* (-2.39)				
	Has a Website		-1.37** (-4.60)	-1.26** (-4.16)		-1.26** (-3.64)				-1.36** (-4.37)	-1.34** (-4.28)				
	Number of Followers				-0.00012 (-1.56)	9.0e-06 (0.11)			-0.00015 (-1.39)			-0.00020* (-2.03)			
	Number of Tweets per Workweek							-0.032 (-0.69)	0.083 (1.54)			0.082 (1.53)			
(Less than One Tweet per Workday excluded)	Twitter Age Relative to Truck Age						0.0014* (2.26)		0.00095 (1.34)		0.0015* (2.19)				
	One tweet per Workday									-0.57 (-1.34)	-0.60 (-1.41)				
	Two tweets per Workday									-0.82+ (-1.85)	-0.87* (-1.96)				
	Many tweets per Workday									-0.16 (-0.47)	-0.12 (-0.36)				
	Number of Reviews											-0.35** (-6.43)		-0.43** (-4.38)	
	Average Review Score												-0.072 (-0.28)		-0.047 (-0.19)
(North American Excluded)	Dessert Cuisine	-0.20 (-0.50)	-0.0013 (-0.0034)	0.0053 (0.014)	-0.12 (-0.29)	0.015 (0.037)	-0.14 (-0.37)	-0.054 (-0.14)	-0.22 (-0.54)	-0.040 (-0.10)	-0.056 (-0.14)	-0.22 (-0.54)	-0.80* (-2.03)	-16.4 (-0.0090)	-19.3 (-0.0053)
	East Asian Cuisine	-1.60* (-2.19)	-1.71* (-2.34)	-1.71* (-2.33)	-2.26* (-2.22)	-2.35* (-2.30)	-1.58* (-2.16)	-1.58* (-2.16)	-2.24* (-2.19)	-1.75* (-2.38)	-1.80* (-2.45)	-2.24* (-2.20)	-1.11 (-1.51)	-16.8 (-0.0089)	-18.7 (-0.0053)
	European Cuisine	-0.75 (-1.23)	-0.82 (-1.35)	-0.98 (-1.59)	-0.62 (-1.01)	-0.89 (-1.43)	-0.42 (-0.70)	-0.60 (-0.98)	-0.42 (-0.66)	-1.06+ (-1.66)	-0.77 (-1.20)	-0.58 (-0.94)	-0.95 (-1.56)	-0.73 (-0.69)	-2.56* (-2.27)
	Latin American Cuisine	0.12 (0.33)	-0.20 (-0.52)	-0.075 (-0.20)	-0.30 (-0.66)	-0.38 (-0.81)	0.095 (0.26)	0.037 (0.10)	-0.32 (-0.69)	-0.079 (-0.20)	-0.0036 (-0.0092)	-0.36 (-0.80)	0.22 (0.58)	-0.56 (-0.85)	-0.69 (-1.03)
	West Asian Cuisine	-1.53* (-2.06)	-1.37+ (-1.87)	-1.48* (-2.02)	-1.18 (-1.59)	-1.39+ (-1.89)	-1.15 (-1.57)	-1.23+ (-1.67)	-1.08 (-1.46)	-1.53* (-2.07)	-1.45* (-1.96)	-1.14 (-1.54)	-0.66 (-0.88)	-1.34 (-1.28)	-1.99+ (-1.84)
	DC Location	-1.56** (-3.23)	-1.53** (-3.00)	-1.47** (-2.89)	-1.24* (-2.45)	-1.51** (-2.83)	-1.30** (-2.64)	-1.37** (-2.86)	-1.23* (-2.31)	-1.24* (-2.45)	-1.00+ (-1.87)	-1.26* (-2.43)	-0.31 (-0.70)	-3.96** (-2.84)	-2.97* (-2.11)
	Arlington Location	-1.28* (-2.35)	-1.22* (-2.18)	-1.15* (-2.05)	-0.99+ (-1.78)	-1.05+ (-1.81)	-1.00+ (-1.83)	-1.14* (-2.17)	-0.92 (-1.59)	-1.02+ (-1.86)	-0.67 (-1.14)	-1.00+ (-1.75)	-1.25* (-2.53)	-2.80+ (-1.76)	-3.77* (-2.20)
	Fairfax Location	-1.41* (-2.30)	-1.22+ (-1.90)	-1.27* (-1.99)	-1.50* (-2.11)	-1.56* (-2.12)	-1.26* (-2.06)	-1.22* (-2.03)	-1.49* (-2.07)	-1.07+ (-1.65)	-1.01 (-1.54)	-1.49* (-2.08)	-0.97+ (-1.72)	-4.20* (-2.42)	-5.06** (-2.88)
	Montgomery Location	-1.32* (-2.32)	-1.49* (-2.43)	-1.44* (-2.36)	-1.09+ (-1.88)	-1.39* (-2.24)	-1.22* (-2.11)	-1.14* (-1.99)	-1.29* (-2.07)	-1.26* (-2.08)	-1.12+ (-1.79)	-1.28* (-2.09)	-0.95+ (-1.75)	-4.03** (-2.58)	-5.35** (-3.34)
	Loudoun Location	-14.1 (-0.014)	-14.2 (-0.015)	-14.3 (-0.012)	-14.4 (-0.014)	-14.5 (-0.011)	-14.5 (-0.015)	-14.4 (-0.015)	-14.5 (-0.014)	-14.8 (-0.0077)	-13.9 (-0.011)	-15.1 (-0.011)	-14.8 (-0.011)	-18.1 (-0.0042)	-19.7 (-0.0020)
	Prince Georges Location	0.84 (0.82)	1.03 (0.99)	1.03 (0.98)	0.53 (0.51)	1.08 (1.02)	0.62 (0.60)	0.64 (0.63)	0.53 (0.51)	0.89 (0.85)	0.61 (0.57)	0.51 (0.49)	-0.66 (-0.64)		
	Fredericksburg Location	-15.4 (-0.0095)	-16.5 (-0.0095)	-16.5 (-0.0079)	-15.7 (-0.0092)	-16.7 (-0.0071)	-15.6 (-0.0096)	-15.6 (-0.0096)	-15.8 (-0.0092)	-17.3 (-0.0054)	-16.3 (-0.0078)	-16.5 (-0.0070)	-17.1 (-0.0060)		
	Constant	-1.96** (-3.88)	-1.84** (-3.49)	-1.61** (-3.03)	-2.54** (-5.28)	-1.69** (-3.10)	-2.71** (-5.54)	-2.52** (-5.42)	-2.77** (-5.21)	-1.44** (-2.71)	-1.74** (-3.08)	-2.61** (-5.21)	-2.22** (-5.24)	-0.25 (-0.13)	1.88 (0.95)
	Observations	257	257	257	250	250	257	254	247	254	254	247	257	182	182
z-statistics in parentheses ** p<0.01, * p<0.05, + p<0.1															

Discussion and Conclusion

This paper analyzed the usefulness of social media tools for food truck operators. While we cannot test the effectiveness of Twitter, per se, because all trucks use Twitter, we can test whether the way in which trucks use Twitter matters. We find that trucks sending about two tweets per workday are more likely to stay in business than those that send fewer, but sending more than two does not appear to provide any additional benefits. One possibility could be that informing consumers of a specific food truck's location is the most important use of Twitter for trucks. Tweeting significantly less than once or twice per day, however, is correlated with exiting the market sooner. This could either indicate that a truck is not operating every day or, because of its lack of communication regarding its locations, consumers are unable to find a specific truck.

Additionally, the number of Food Truck Fiesta reviews is correlated with staying in business longer—not surprisingly, since the number of reviews likely reflects demand—but the average review score itself is not correlated with whether a truck continues operating.

Finally, trucks with a Facebook page and their own websites are more likely to stay in business than those that do not. However, it is not clear whether the Facebook page and website are important in and of themselves, or whether they indicate truck owners who put more effort into their businesses or are somehow otherwise more competent business people.

This analysis excludes many factors truly necessary to understanding the food truck industry. Most importantly, the industry operates in the context of a larger market. The product market is primarily the market for casual lunch, but some trucks offer dinner, and many also cater private events. The geographic market is more difficult to define given that the trucks are mobile, but is generally the downtown areas of the jurisdiction in which the truck is licensed. Competition in this broader market affects the development and behavior of firms in the industry, just as the trucks likely affect the traditional brick-and-mortar restaurants, as well.

Arguably more important to food trucks is the role of regulation, and of more interest broadly is what happens to an industry as new entrants become the incumbents. Future research on food trucks seems promising in this area as new regulations and the lottery system take hold. Will the new rules hurt or help the industry? How will they affect entry and exit? Some trucks, for example, have announced possible retirements because of the new regulations.²² Hopefully our database can provide a baseline for testing the effects of these new rules.

²² See, for example, Jessica Sidman, "Cirque Cuisine Plans to Shut Down, Citing New Food Truck Regulations," *Washington City Paper*, November 20, 2013, <http://www.washingtoncitypaper.com/blogs/youngandhungry/2013/11/20/cirque-cuisine-plans-to-shut-down-citing-new-food-truck-regulations/>.