# How Effective Are Expert TV Hosts at Saving Failing Businesses?


## Abstract

The profit and loss system is an integral part of a dynamic market economy. Losses eliminate businesses that are inefficiently managed or whose products no longer provide sufficient value. Almost a dozen popular TV shows feature entertaining expert hosts claiming to "save" failing businesses with injections of physical and human capital. We undertake the first comprehensive analysis of these shows, calculating the failure rates of the businesses and analyzing the incentive structure facing the shows, networks, hosts, and participants. In general, we find that these shows are largely unsuccessful in saving failing businesses due primarily to principal-agent and knowledge problems. *(100 words)*

# How Effective Are Expert TV Hosts at Saving Failing Businesses?

> [T]he choices TV programmers make about what gets made reflect more than their attempts to please audiences ... TV is a business. That matters because the way TV conducts its business has a direct impact on the process by which programs are selected, financed, and produced.
>
> Magder (2004, p. 138)

## I. INTRODUCTION

The "reality TV" genre has become extremely popular since *Cops* and *MTV's The Real World* first aired in 1989 and 1992. To date almost a dozen reality TV shows have aired featuring celebrities or experts attempting to save struggling businesses. In shows such as *Kitchen Nightmares*, *Bar Rescue*, and *Tabatha's Salon Takeover*, the hosts provide physical and human capital injections into the business, such as building renovations, training, and rebranding. In one show, *The Profit*, the host actually purchases an equity stake in the businesses featured. The shows also typically provide a healthy dose of entertaining family, employee, or owner infighting and drama, which are also aided by the host during their brief visit.

In this paper we provide the first comprehensive analysis of these popular television shows that portray expert hosts claiming to save failing businesses. Assessing the success of these shows is no small task because of the large quantity of both qualitative and quantitative data necessary. To conduct our analysis we compile data on every establishment that has appeared on all 11 different television shows (over 500 total businesses), examine thousands of actual customer reviews, conduct phone interviews with business owners, watch hundreds of hours of the actual shows, and compile first-hand accounts available online from owners, employees, and local reporters.

Many of the businesses featured on these reality TV shows are failing because they probably should. They are depicted on TV as mismanaged, dirty, outdated, lacking value propositions, offering poor customer service, and/or targeting a dwindling customer base. We believe there is good reason to be skeptical that a physical renovation and a few days of advice and training – even by a talented expert – can alter the trajectory of a business's performance. We expect the businesses featured on these shows to have higher than average failure rates.

A vibrant economy will have both a large number of new business start-ups and failures (Sobel, Clark, and Lee 2007; Sobel 2015). Minimizing business failures should not be a society's *a priori* goal – not all businesses are worth saving, nor can all be saved. In an economy where entrepreneurs – even with unusual ideas or no prior skills – can open a business, there will inevitably be a lot of business failures. The profit and loss system is an integral part of a dynamic market economy and it is characterized by churning, referred to by Schumpeter (1934 [1911]) as a process of creative destruction. Losses weed out businesses that are managed inefficiently, or whose products do not provide sufficient value to justify production costs.

Prior research has found the long-run outcomes of other reality TV shows intended to "help" people to be ineffective in a wide variety of areas. For example, Fothergill et. al. (2016) find that the reality weight-loss show *Biggest Loser* is not effective when subjects are examined long term. Similarly, the A&E show *Hoarders* has only mixed results in helping those with hoarding disorders when subjects are viewed over the long term (Weiss 2010). Essentially, we are asking the same question about these "save the business" shows, and are the first to do so in a comprehensive and scientific manner.

The previous literature on reality TV shows suggests that what is portrayed on television is distorted for entertainment purposes; it cannot be taken at face value, and we confirm this bias

in the shows we examine. For example, Oliver (1994), Doyle (2003), and Lawson and Lawson (2016) find that the reality police show *Cops*, one of the longest running reality TV series in history, distorts reality through highly selective editing and an unrepresentative sample of actual crimes to boost viewership and advertising revenue. For example, violent crimes and encounters with police are rare in actuality but are portrayed as widespread and common on the show because these scenes generate viewership. Similarly, the show *Storage Wars* faced litigation over rigging the auctions. Apparently, producers had planted items in storage lockers before they were auctioned, told some participants which lockers to bid on (and how much), and even financed some cast members' bids (Gardner 2013). The house-hunting and renovation show *Fixer Upper* was exposed for complete inaccuracy and outright dishonesty by hiding the fact that the people on the show were *required* to be under contract on a specific house, despite a large part of the show portraying them as house hunting and deciding among several houses to potentially renovate (Foxnews.com 2016). The network responded that viewers enjoy the show because of the interaction between the show's hosts, not the accuracy of the portrayals.

Our analysis leads us to conclude that to a large extent, since these "save the business" shows are businesses themselves, the shows' hosts, producers, and networks are primarily interested in making successful television and pleasing sponsors with placements. Accuracy and effectiveness are not the goals; rather the shows are in the business of providing entertainment to television viewers to increase the viewership exposed to the placements and advertisements of sponsors. Unfortunately, what makes for a successful television show may not be what is best for struggling businesses. Thus, a principal-agent problem, along with a lack of local knowledge by show hosts, helps explain why the shows tend to have abysmal records at saving businesses. Consistent with our conclusion is the fact that the only show whose host actually takes an equity

position in the businesses featured – eliminating the principal-agent problem – has a much better record than the other shows.

## II. DEFINING SUCCESS AND FAILURE

Chef Gordon Ramsay's *Kitchen Nightmares* was the first reality TV show to move into the domain of saving struggling businesses. Since then, a variety of other shows have aired. Table 1 is a listing of the 11 American TV shows we analyze that attempt to save failing businesses. The shows are listed by original air date.

[Table 1 about here.]

Four of these shows routinely captured over 1 million viewers, and a few stayed on the air long enough to have 75 or more episodes. However, most were minor shows with only a handful of episodes and limited viewership. They have also featured businesses in a wide variety of industries including restaurants, hotels, bakeries, and even hair salons. We begin our analysis by discussing the shows, the annual business failure rates of the underlying industries, and the post-show failure rates of the establishments featured on the shows.

Obviously, our analysis should account for the different industries' differing failure rates. Broad industry failure rates are available from the U.S. Bureau of Labor Statistics (BLS), Business Employment Dynamics Database. These failure rates are provided in Table 2 for the industries we examine.

[Table 2 about here.]

As noted in Table 2, the overall business average annual failure rate is 11.8%, while the rate for accommodations is 4.6% and for food service/drinking establishments it is 16.7%. Even if these expert hosts could bring these struggling establishments up to "average" for their

industries, there would be substantial differentials in the post-intervention failure rates for the different shows, simply based on the different industries in which they operate. For example, Gordon Ramsay hosted two different shows in two different industries (*Kitchen Nightmares* and *Hotel Hell*) and our later results confirm the differential outcomes across his two shows are *entirely* explained by this industry differential.

It is important to note that the BLS data are *annual* failure rates. Some of the data we examine for the shows are seasons that aired up to a decade ago. This must be taken into account in the analysis. If 10% of businesses fail each year, then in a sample of 100 randomly selected businesses visited in a specific year 10 would be expected to fail the first year, 9 more (10% of the remaining 90) would be expected to fail in the second year, roughly 8 more in the third year, and so forth. So if we witness only 73 out of 100 businesses surviving after three years have passed, the failure rate is not 27%, but rather 10% annually. It is critical to be precise on these two numbers and not use them interchangeably. We henceforth term the overall percentage closed as the *cumulative closure rate* (CCR), while the more accurate yearly figure we term the *average annual failure rate* (AAFR).

Popular press articles and TV segments about a few of these shows have provided grossly inaccurate assessments of the outcomes because they do not recognize this distinction. They typically cite the CCR, calling it a failure rate, without making any adjusting for the time that has passed (Satran 2015; Interrobang 2014). Citing only the CCR is equivalent to saying the death rate in the United States is 100% because everyone eventually dies. It is a meaningless way to analyze the performance of the TV shows. The CCRs for two shows could be completely different simply because of the time passed since the interventions, even if the AAFRs were identical. Presumably, press outlets and blogs rely on the CCR because computing the AAFR is

more tedious. However, the AAFR is the more accurate representation of ongoing firm performance in the industry – and the appropriate one to use in judging the relative performance of our different "save the business" television shows.

Since the shows occur over several years and seasons, we must properly weigh and compile the data into an AAFR that accounts for the length of time that has passed since each season of the show. Let $EV_i$ be the number of establishments visited in season $i$ of the show, $ET_i$ be the number of establishments surviving today from season $i$, and $N_i$ be the number of years ago season $i$ aired. If $S_i$ is the annual survival rate for establishments from season $i$ of the show, the relationship is given by:

(1) $$ET_i = EV_i \cdot S_i^{N_i}$$

Because we know the data for $ET_i$ and each $EV_i$ (and $N_i$) we can solve for the survival rate for establishments from season $i$, or $S_i$:

(2) $$S_i = \sqrt[N_i]{\frac{ET_i}{EV_i}} = \left(\frac{ET_i}{EV_i}\right)^{\frac{1}{N_i}}$$

Because we have multiple seasons occurring at different times, with differing numbers of establishments that we wish to weight equally, an additional step is required. Letting $Z$ be the total number of seasons, we can weight each season's survival rate by the share of establishments visited in that season relative to the total number visited across all seasons $[EV_i/\sum_{i=1}^{Z} EV_i]$ to compute the weighted average. Thus, the combined, weighted, average annual survival rate (AASR) across all seasons is:

(3) $$AASR = \sum_{i=1}^{Z}\left[\left(\frac{EV_i}{\sum_{i=1}^{Z} EV_i}\right) \cdot S_i\right] = \sum_{i=1}^{Z}\left[\left(\frac{EV_i}{\sum_{i=1}^{Z} EV_i}\right) \cdot \left(\frac{ET_i}{EV_i}\right)^{\frac{1}{N_i}}\right]$$

The AAFR is simply 1-AASR. This is our formula for calculating the failure rates of businesses featured on these shows.[1] These rates will then be compared to the industries' AAFRs.

## III. ANALYSIS AND RESULTS

In order to analyze the TV shows' failure rates relative to those of the industry, we first compile a list of all business establishments featured on the shows sourced from the TV shows' websites and checked with other sources, including *TV Guide*, other reality TV websites, and Wikipedia. To determine if an establishment remains open we used data from Yelp, TripAdvisor, Google, Facebook, Instagram, the Yellow Pages, and the establishment's website. In some cases, we called the business in question and interviewed owners.[2] Our criterion needed to be clear and simple: Would a customer stopping by today find the establishment in operation, in that same location, fundamentally as it was left by the show, even if it reverted back to the original name, or if it was sold to a new owner?

To ensure enough time had passed to assess the possible business failures, for the few ongoing shows we ensured at least one year had passed from the show's visit for the results to be included. Once the data were compiled by season, we then aggregated them by year to use our

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[1] As a numerical example, assume two seasons; season 1 being 5 years ago, 10 establishments visited of which 6 are still open; season 2 being 3 years ago, 14 visited and 8 still open. The calculation would be:

$$AASR = \frac{10}{(10+14)} \cdot \left(\frac{6}{10}\right)^{\frac{1}{5}} + \frac{14}{(10+14)} \cdot \left(\frac{8}{14}\right)^{\frac{1}{3}} = 0.860266 \approx 86\%$$

and thus, the AAFR = 1 – AASR = 1 – 86% = 14%.

[2] As we will discuss, most owners sign legal agreements barring them from discussing their experience on the show. For a few of the shows, websites contain lists of the establishments and whether they are open, closed, or sold (www.foodnetworkgossip.com, www.barrescueupdates.com, www.grubstreet.com, www.theprofitupdates.com, or www.realitytvrevisited.com). However these are not always updated so we checked each establishment independently.

formula from Equation 3 to derive the AAFR for the show across all episodes using the year of filming (not air date) for our year coding.[3]

### *A. Example results:* **Kitchen Nightmares**

We present the full details of our computations for one show to serve as an example, but for the remainder we present only the results, due to space constraints. *Kitchen Nightmares* ended in 2014 after 6 seasons. The data for this show are given in Table 3. Overall, 70.1% of the 77 establishments from the show have closed, and the inaccuracy of assessing the show based on this CCR is clear in the table. As our earlier example illustrated, 100 businesses with an annual failure rate of 10% implies a yearly path of 90, 81, 73, etc., surviving businesses. It is easy to see the similar pattern in the *Kitchen Nightmares* data. The failure rate is the highest for the first season, with only one of the 21 establishments remaining in business.

[Table 3 about here.]

Using Equation 3, the AAFR for all *Kitchen Nightmares* businesses is 30.1%, as shown in the lower panel of Table 3. For context, Table 3 also shows the industry failure rate of 16.7%. The AAFR for the businesses featured on *Kitchen Nightmares* is almost twice the industry average. Academically, the question becomes whether the difference between the industry average and the show is statistically significant.

The null hypothesis for this test ($H_o$) is that the AAFR of the businesses featured on the show is equal to the industry's AAFR. This distribution has mean $E[Y] = p$ and variance $var(Y) = p \cdot (1-p)/n$. Due to the small sample size, the critical values are calculated using the *t*-

[3] Some establishments spanned two episodes. To avoid double counting we assigned these to the first episode on which they appeared.

distribution with *n-k* degrees of freedom (see Judge et al. 1988, p. 45).[4] The resulting *t*-statistic (7.778) with the indicated level of statistical significance is also shown in Table 3. Indeed, the average annual failure rate of the businesses featured on *Kitchen Nightmares* is significantly higher than the industry, at a 1% level. Thus, while the record of the show at "saving" failing businesses is not nearly as bad as portrayed in the popular press, which often cites the CCR of 70.1%, the AAFR of show participants is still significantly higher than the industry average.

*Kitchen Nightmares*' AAFR of 30.1% divided by the industry average failure rate of 16.7% yields a ratio of 1.80, also shown in Table 3. A ratio of 1.80 means the AAFR from the show is 80% higher than the industry average. In other words, even after being on the show the establishments are 1.8 times as likely to fail as another randomly selected business in their industry. It is worth explicitly noting that had the show's failure rate been lower than the industry average, the ratio would be less than one. Since this ratio accounts for different industry failure rates, we use this ratio to compare the effectiveness of different shows in different industries.

***B. Customer ratings***

One concern in comparing the post-intervention failure rates across shows is whether the shows were intervening in businesses that were equally likely to fail without help. It is likely that any business agreeing to appear on a "save the business" show is more likely than average to fail. Still, the failure rate could differ across shows. To gain insight we collected a sampling of pre-intervention customer reviews ("pre-reviews") for the establishments from Yelp and TripAdvisor, where any customer can rate an establishment on a scale of 1 to 5 stars, with 5

[4] The number of observations used to compute the degrees of freedom is not simply the number of establishments. Because these are annual failure rates, and the business must survive each year's cut, the true number of observations is instead the number of establishment-years (that is, the sum of the number of establishments for each season times the number of years over which it is observed).

being the highest. A strong correlation exists between business success/failure and customer ratings (Chevalier and Mayzlin 2006); the lower the pre-reviews, the higher the probability of failure without help. While there is no perfect way to judge how close a business is to shutting down, the pre-review averages for the establishments are the best proxies available to reflect these differences for businesses across the different shows.

We are also able to compute average post-intervention review scores ("post-reviews") to analyze any change in review scores after the show interventions. An improvement in customer review averages after the interventions could be viewed as an alternative measure by which the success of the different shows could be compared. The problem with this, however, is that the post-intervention reviews may suffer from a bias. This is because some customers of a restaurant "saved" by Gordon Ramsay, for example, may have higher expectations than prior to the intervention, which could bias the post-reviews. The pre-reviews are not subject to this bias. Thus, our primary use is of the pre-review data as a measure of customer satisfaction, known from prior literature to be closely correlated with business' success rates.

This data was difficult to obtain because we needed to pinpoint the exact date of the actual visit and intervention (not the date the show aired), and we needed a sufficient number of pre- and post-reviews. It required coding every customer review (pre or post show visit) and averaging them separately. We did this for a subsample of 125 establishments over 2013 and 2014, the two common years all 11 shows aired. This involved hand coding almost 12,000 individual customer reviews (4,366 pre; 7,401 post). The number of reviews differs by establishment, averaging 35 pre-intervention and 59 post-intervention reviews.

### *C. Results across industries*

We present our main results in Table 4. The shows in the table are sorted by industry, and ranked within industry to aid in comparison. We organize the following discussion by industry.

[Table 4 about here.]

1. Food service and drinking establishments

The top section of Table 4 contains the results for the shows that intervene in food service and drinking establishments. *Restaurant Redemption*, featuring chef Ching-He Huang helping failing Asian restaurants, has the fewest usable observations at 26, but each of the others has 77 or more. There is a striking equality in the results from *Restaurant Redemption*, *Kitchen Nightmares*, and *Restaurant: Impossible*, all with AAFRs of roughly 30%, and all with failure rates significantly higher than the 16.7% industry average, at the 1% level. The ratios of the show to industry failure rates are 1.77, 1.80, and 1.80, respectively; implying AAFRs for the establishments on the shows that are roughly 80% higher than the industry average, even after the intervention. In essence, all three shows are equally (in)effective at saving these establishments. There is no differential across the three hosts, despite the differences in their backgrounds and interventions.

In this group *Bar Rescue* appears to have the best record, with a show AAFR of 16.6%, virtually identical to (and not statistically different from) the industry average, resulting in a ratio of 0.99. The “pre-reviews” in Table 4 raise doubt that higher initial quality among the establishments explains *Bar Rescue*’s lower failure rate. This is because *Bar Rescue*’s establishments have the second lowest pre-review scores among these four shows, at 3.18 (out of 5 possible stars). Interestingly, the virtually identical failure rates for *Kitchen Nightmares* and

*Restaurant: Impossible* is equally matched by their virtually identical pre-reviews of 3.45 and 3.47, respectively. Perhaps most striking is that for three of the four shows, including *Bar Rescue*, the average customer rating falls after the intervention.

While *Bar Rescue* seems to clearly have the best record among this first group, we must recognize it is not really in the same narrow industry as the other three. The BLS data only gives the failure rate for eating and drinking places combined, and bars may have a different failure rate than restaurants. At the beginning of some *Bar Rescue* episodes the narrator makes a statement about how many bars fail annually. However, these numbers have changed through the seasons, from "over 5,000" to "6,500". We were unable to independently confirm these numbers. However, given the number of establishments in NAICS code 722410, Drinking Places, this would imply an AAFR of higher than 11.5% based on "over 5,000" bars, and 14.9% based on "6,500". The 16.6% AAFR for *Bar Rescue* is not significantly different from 14.9%, but is significantly higher than 11.5%, at the 1% level. Thus, *Bar Rescue*'s own industry data suggest that bars may have a lower failure rate than restaurants, partly accounting for the lower failure rate of this show.

2. Bakeries

Next we examine the two shows that focus on saving failing bakeries. The sample sizes are small at 10 and 13 establishments, and we are reluctant to draw strong conclusions based on the small sample sizes. Again, since we do not know the failure rate for bakeries, we have no real comparison group other than the food and drinking industry. The 10 bakeries featured on *Save My Bakery* do have a lower failure rate than the food and drinking industry at large, but with the extremely small sample size this differential is not statistically significant.

An examination of the pre-reviews suggests that the lower than industry failure rate for establishments featured on *Save My Bakery* may simply be a function of the bakeries being in better shape prior to the intervention than other failing businesses appearing on these shows. The average pre-review is 4.44, out of 5, which is surprisingly high. Similar to the first group of shows, these interventions also result in a decline in the average customer review scores, and the -0.61 decline for *Save My Bakery* is relatively large. It would seem odd that a show with significantly better results would have one of the largest reductions in customer reviews, so we believe the evidence suggests that *Save My Bakery*'s better record is explained by the businesses not being initially as close to failure. However, again with such small samples, we are reluctant to draw firm conclusions.

3. Hotels (Accommodations)

*Hotel Impossible*'s failure rate is slightly below the industry average, while *Hotel Hell*'s rate is almost twice the industry average, but neither difference is statistically significant. The lack of statistical significance for *Hotel Hell*'s higher failure rate is because of the small sample size of only 12 observations. Interestingly, the hotel industry (both shows) is the only one in which customer reviews uniformly increase after intervention.

Interestingly, Gordon Ramsay is the only host with shows in two industries. The two shows (*Kitchen Nightmares* and *Hotel Hell*) have different failure rates, 30.1% and 8.5%, which raises doubt that any particular host would be equally successful working across industries. In fact, the differential in failure rates seems to be *entirely* explained by the industries. Table 4 indicates that Ramsay's shows have very similar ratios (1.80 and 1.85). Thus, relative to the

industries, Gordon Ramsay is equally (in)effective at saving failing businesses, having AAFRs about 80 to 85 percent higher than the relevant industry averages.

4. Other industries

The final category includes shows that claim to save failing business in a variety of different industries. *Save Our Business* with host Peter Jones, a British entrepreneur and businessman, featured a wide range of establishments across the United States, including an indoor playground, karate school, floral shop, furniture and mattress store, and bagel deli. Given the wide variety of businesses, we compare the AAFR of this show to that of all U.S. businesses, 11.8%. The show aired for one season with 6 episodes, and only one of those establishments has failed, resulting in a low AAFR. However, with so few observations the difference from the industry failure rate is not statistically significant.

*Tabatha's Salon Takeover* featured Tabatha Coffey, an Australian hairstylist and salon owner, helping failing hair salons and barbershops. During seasons 4 and 5, the show expanded to a wide variety of businesses, ranging from restaurants and bars to a dog daycare facility. The show's name was changed to *Tabatha Takes Over*. Again, the BLS data does not have a failure rate specifically for salons, and since a wider variety of businesses were helped in later seasons, we compare the results of this show to the overall U.S. AAFR for all industries. There is no significant difference.

Our most interesting results come from *The Profit*. This show is different because host Marcus Lemonis personally invests in the businesses profiled on the show. These include a variety of establishments, selling such things as BBQ, candles, shoes, jeans, signs, and furniture. Therefore, we benchmark his results against the overall AAFR across all industries.

It is important to stress that, unlike the other shows, not all the businesses featured on *The Profit* are actually failing, despite the show's claim that it is helping "struggling" businesses. This is the only show for which we can precisely document a business's financial stress. As part of each episode, the host goes over the financial reports for the business, so in 33 of the cases it was possible for us to determine the exact profit and loss levels of the businesses. Of these 33 for which we could identify the data, 18 (54.5%) were losing money, 2 (6.1%) were roughly breaking even, and 13 (39.4%) were profitable, 5 of which had annual profits exceeding $250,000 per year. The profitable ones were often characterized on the show as needing help because they had too much debt, or had other issues in production, distribution, or sales.

Given the host Lemonis invests his own money, and he provides an ongoing post-show interaction with the business owner, this show creates different incentives than the other shows in our study. Since the host takes an ownership stake in the business, his incentives align with the original business owners'. Therefore, we hypothesize the failure rate of the businesses featured on *The Profit* should be the lowest among the shows as there is no principal-agent problem.

Interestingly, this show also creates a control group, as Lemonis does not reach an agreement to invest in all of the businesses shown. For this reason, we separate the data for *The Profit* into a pair of results, one for the establishments he makes a deal with and one for those he does not (indicated "Deals" and "No Deals" in Table 4). Out of the 30 businesses in our sample, 9 never reached a deal, even after the show aired. However, in some cases he does help the business prior to the deal falling through (The Profit Success 2015).

The results from *The Profit* are indeed different, as the AAFR is 0% for the businesses with which he does make a deal. This rate is lower than the overall U.S. average at a 5% level of statistical significance, and *The Profit* is the only show with such a result. Interestingly, the

failure rate of the "No Deals" businesses is also 0%. This may suggest that the host chose businesses for the show that he expected to be successful, regardless of whether they ultimately entered into a deal with Lemonis.[5] Table 4 also shows the pre-reviews for businesses on *The Profit* are higher than the businesses featured in most of the other shows.

***D. Regression models***

Overall, our results thus far suggest that reality TV shows generally tend to be unsuccessful at attaining post-intervention failure rates at or below their industry averages. In fact, for the shows with the largest number of observations, the results seem to suggest the establishments featured on these shows fail at a rate almost twice as high as the industry average. We now subject our data to regression analysis.

Because of the close correlation between customer reviews and business success found in prior literature, we first construct an OLS model of the post-reviews for the businesses. To what degree are the establishments' post-intervention reviews explained by the pre-intervention reviews versus the different TV hosts' interventions? As noted above, we calculated the average post-reviews using Yelp, Facebook, Google, and Trip Advisor, for as many of the businesses as we could. We then regressed these scores on dummies for individual shows, the pre-reviews, and year dummies. The results from this regression are shown in Table 5, column A.

[Table 5 about here]

[5] However, this does not mean there aren't differences between the two groups in important areas we cannot assess, such as revenue or sales growth. Since our original analysis, Amazing Grapes, a business on *The Profit* that entered into an agreement with Lemonis, closed in July 2017, reportedly after problems with lawsuits and differences with Lemonis. However, updating this result only slightly changes the overall show's AAFR, and does not affect our conclusions.

The pre-reviews are highly significant at the 1% level, indicating the higher the customer ratings prior to the intervention, the higher are the post-review ratings. None of the year dummies is statistically significant. Of the show dummies, only the two hotel shows, *Hotel Impossible* and *Hotel Hell* are statistically significant at the 1% and 5% levels, respectively. Recall that the hotel industry data from Table 4 indicated that the average review scores rose only in the hotel industry. This, coupled with the fact that reviews scores did not increase for Ramsay's restaurant show, leads us to believe that this is an industry-specific rather than a show-specific result.

To further test the effect of the shows on these businesses, we test a probit model of whether the business was still open as of the time our data were collected in 2016. This variable is called *Open*, and coded with a 1 if the business was still open and 0 if not. Again, because most of the variables are binary, this model contains significant multicollinearity, making it difficult to include all of the shows in this model. Independent variables are included for the four shows for which we have the most data: *Bar Rescue*, *Kitchen Nightmares*, *Restaurant Impossible*, and *Hotel Impossible*. We include show dummies, pre-review scores, industry-level AAFRs, and dummy variables for 2010-13 to control for economic conditions over time. Finally, we included a variable (*Time Passed*) that counts the number of months between when the show episode aired and when we collected the data. Results of this model are shown in Table 5, column B.

Only two variables are statistically significant at explaining the probability of an establishment remaining open. The coefficient on pre-reviews (positive and significant at the 1% level) indicates that the higher rated the establishment was prior to the intervention, the more likely it is that the establishment is still open as of our data collection. In addition, the industry

AAFR is negative and statistically significant at the 10% level, suggesting that the higher the industry's AAFR, the less likely the establishment is still operating. Both of these are intuitive results. None of the show dummies has predictive power in the probit model.[6]

Overall, the results of these two models bolster the conclusion that the expert hosts are fairly ineffective at "saving" businesses. The primary determinants of whether an establishment featured on these shows remains open are: (1) the failure rate for the industry, and (2) the reputations of the businesses as reflected in their pre-intervention customer reviews. We find no systematic or robust evidence that the shows themselves matter, or that the shows produce results that differ in any way attributable to the host.

## V. COMMON ELEMENTS OF "SAVE THE BUSINESS" TV SHOWS

Despite the longevity and viewership of some "save the business" shows, most of the shows are surprisingly ineffective at actually saving businesses. Why? To a large extent the answer is the same as for the ineffectiveness of other reality shows on weight loss and hoarding. While the shows may portray their purpose as helping those featured, in actuality their primary purpose, as for all other television shows, is to provide profit for the production company and TV network that airs it (Mogel 2004; Blumenthal and Goodenough 2006). Saving failing businesses is *not* the primary purpose of these reality TV shows. The shows themselves are business ventures by production companies and TV networks. Whether a particular show is profitable depends on viewership data, which are closely linked to the ability of the shows to sell paid advertisements and sponsorship placements in the programs. Many of the save the business shows share common ingredients and problems, and we discuss some of these in this section.

[6] We did attempt to include other show variables and also modeled the shows individually. Regardless of the specification, none of the show variables was significant.

### *A. Principal-agent problem*

The difference in the incentives between the show as a profitable TV program and what the featured business needs most is best understood in the context of the *principal-agent problem* from the economics literature (Mitnick 1975; Jensen and Meckling 1976). This occurs when the incentives of the agent, the person providing a good or service to others, does not have the same incentive to provide the outcome that would be best for the principal, the person receiving the good or service. When decisions are made of which businesses to select for the show, what to improve, how to improve it, and on which problems to focus, the incentives of the two parties will not always align. Since the decision authority on changes rests with the show, and the upfront legal contracts developed by the show are strong and binding, when these incentives do not align it is the incentives of the show that dominate.

It is difficult to speculate on exactly how the business owners' interests may vary from the shows' hosts and producers. This is because the businesses featured on the shows are often required to sign lengthy legal contracts that prevent owners and employees from discussing the show and what was done.[7] There are well-documented cases of owners being threatened with legal action if they talk about their experience on, or disparage, the show.[8]

Our conclusions about the importance of this principal-agent problem are strengthened by the fact that one show, *The Profit*, is sufficiently different in that the host personally invests his

[7] For example, *The Profit* casting (http://www.theprofitcasting.com/) contains conditions such as "I shall keep in strictest confidence and shall not disclose to any other applicant, participant or other third party at any time (i.e., prior to, during, or after the taping or exhibition of any episode of the Program) any information or materials of any kind, including without limitation..."

[8] Ryland (2013) documents the owners of one establishment threatened with a letter stating "We understand that you are planning a public event ... at which you will discuss your experiences and your 'unflattering portrayals' on the show. If you speak about the show without Upper Ground's and Fox's prior approval, and if you disparage the show, its host, or its producers, you will breach your obligations under Paragraph 10 of your Personal Release and Paragraph 14 of your Participant Agreement ...[t]hese agreements prohibit you from speaking publicly about Kitchen Nightmares, other than to acknowledge 'the mere fact of your participation in the Series in personal publicity relating to yourself.' Your conduct exposes each of you to liability for liquidated damages of $100,000."

own money in the business by taking an equity share, and provides long-term managerial support. This creates an alignment of a *personal* incentive for the show host that is linked to the future survival of the businesses. The AAFR of firms featured in *The Profit* is much lower than the industry average (and the other shows we studied).

In general, to align the incentives of the business owners and the shows, there would need to be a link between viewership and the survival rate of the businesses featured on the show. If there were a clear link, hosts would have a strong incentive to save the businesses, as it would directly increase viewership, ratings, sponsorships, and revenue for the show itself.

Unfortunately (for some of the business owners), the opposite appears to be true. Figure 1 presents the relationship between the ratio measures for the show failure rates (from Table 4) and the average show viewership (in millions). The relationship is clearly positive with a correlation coefficient of 0.56. A simple OLS regression also results in a statistically significant relationship. That is, shows with higher business failure rates have higher viewership. Thus, viewership does not appear to increase from hosts being more effective at saving businesses. This is hardly surprising, given the more drama and shocking behavior present the more entertaining is the episode, which likely leads to shows selecting businesses with these traits and major issues that simply cannot be solved with a quick TV remodel.

[Figure 1 about here.]

One example of the principal-agent problem at work is that some of the problems the hosts solve are not really the problems hurting the business. Similarly, the show hosts sometimes ignore key problems with the businesses, while focusing instead on contrived problems that are created when show hosts pack the establishments to capacity with customers as a “test” for issues to generate entertaining TV footage of stressed employees.

In many first-hand owner accounts and user reviews on Yelp, a frequent complaint is that the show does not renovate the bathrooms even though they were in dire need of repair (Bar Rescue Updates 2014). Restaurants and nightclubs are turned into five-star environments in the main areas, without a single change made to nonfunctional, broken, or utterly disgusting customer restrooms.[9] In another case, a pot-hole laden parking lot severely damaging customers' cars was not even mentioned or fixed in the show, despite online customer reviews both before and after the show citing it as the main reason the business is not attracting customers.[10] When limited show resources are deployed, the principal-agent problem is at work and what the business actually needs is of secondary importance relative to the incentives to produce a profitable TV show. Shows logically focus their scarce budgets on the things that generate high levels of sponsorship placements visible on television, which are brand name logos and sponsor placements in areas like the dining area, kitchen, or hotel lobby.

### *B. Promotional placements*

The power of paid sponsorships is strong; it drives much of what is portrayed and which interventions are employed on all of the shows we consider. For instance, the shows remove or cover existing beer taps, signs, or posters that show non-sponsor brand names so their logos will not appear on the screen in competition with the brands of the sponsors (Tran 2012). *Bar Rescue*'s Jon Taffer updates drink menus with sponsor branded-liquors and beers, trains staff with employees from sponsoring companies or distilleries, installs high-tech tap and point of sale

[9] A referee pointed out that this is missing an opportunity for a new sponsor placement for restroom facilities. We agree, but note that these shows may not be the best choice for their advertising budgets, relative to other avenues.
[10] See Bar Rescue Updates (2015), Second Base Bar and Grill Update, which discusses a gang shooting at the nightclub that wasn't mentioned in the TV show; and Taraborelli (2011) for a discussion of the cross-dressing hostess and LGBT customer base that was driving away customers omitted from discussion on *Kitchen Nightmares*' DownCity episode. Also see online reviews of Stein Haus Brau & Brats (Friar Tuck's) regarding the parking lot.

(POS) systems of sponsors, for example. Tabatha Coffey of *Tabatha's Salon Takeover / Tabatha Takes Over* and Buddy Valastro of *Bakery Boss / Buddy's Bakery Rescue* also frequently install branded POS systems. All of the shows we consider rely on these sponsorships and the placements throughout the life of the programs.

Do the businesses really need new POS systems? Does a new menu of cocktails featuring one particular brand of liquor help turn-around a failing bar? Are these the best uses of the limited resources at the show's disposal to help the business? Perhaps not; the brands appear on the shows because they are paid sponsors that must be featured, and those changes are likely made regardless of need.

### *C. Financial/physical and human capital*

Despite our claim that these TV shows are themselves businesses whose interests may not align with the interests of the business owners whom they are trying to help, there is no question that the businesses featured have problems, and the shows do indeed provide some help.[11] The help provided typically falls within two categories: financial resources and human capital. The monetary investments made into the business can certainly help to improve their equipment, furnishings, building, help pay off debt, and expand physical capital. The human capital invested by the hosts can include training the business owner and employees, changes in staffing, and changing products and pricing.

If these adjustments remain in place after the show, there is a potential to change the outcome for the business. Simply changing the culture of employees within a business can have a dramatic impact (Katzenbach, Steffen, and Kronley 2012; Schneider 1987). A few shows even

[11] See, as examples, Lore (2013) and Offitzer (2013), although note the business discussed in Offitzer (2013) has closed despite the glowing praise about the show's "miracle".

engage the employees and owner in teamwork and leadership activities. Whether this human capital can be communicated and permanently internalized by the owners and employees, given the limited time spent by the hosts (ranging from 2 to 7 days), however, is unclear, especially given the first-hand accounts documenting that some hosts spent no time with the owners or employees outside of what was on camera.[12]

The ability to save failing businesses, in theory, would be a skill reflected in the human capital of the host. As such, one might expect this human capital to be improved through time and experience. However, there is no evidence that the hosts became more successful in later seasons of the shows in our data. From season to season they repeat the formula of picking disgusting or outlandish places with interesting employees and owners, creating problems to solve, appearing to solve the problems, and moving on to the next episode.

### *D. Publicity effects & local tastes*

Interviews with owners of the surviving businesses suggest that the one helpful thing that the shows did provide was publicity from the TV show airing. Even if the show simply prolongs the time it would have taken for the establishment to close, that may be a benefit we cannot measure precisely in our failure data. Thus, to the extent that these shows do actually help it may be only due to a publicity effect from the establishment appearing on TV.[13] Tomicki (2011) lists data for restaurants on several different TV shows, and argues the effect is roughly a doubling of business, while Platt (2015) finds a slightly smaller effect that is greater in the short term than long term. Not all benefitted from this exposure however, as some businesses that were portrayed

[12] See, for example, Morabito (2012) for an owner account, and Phu (2013) for a quote from one show host saying, "I isolate myself. I don't speak to anyone unless the cameras are rolling..."
[13] In addition, according to Cieslak (2016) at least one show actually pays the businesses for appearing on the show.

negatively on the shows (in terms of rude employees and owners or cleanliness problems) experienced substantial declines in revenue. In some cases, business owners have been quite bitter about their appearance on the shows and say they wish they had never participated.

The publicity of appearing on one of these shows may come with other negative effects. Changing too many things at once, too quickly, and having these changes selected and imposed by an outsider with different motivations can result in disenfranchisement and a lack of ownership in the ideas and discontinuance of the changes implemented during the show's intervention. Major changes can also result in lost business from loyal, long-time customers. This was the main conclusion of Segal's (2012) *New York Times* article that attempted to follow up on a handful of the *Restaurant: Impossible* interventions. It is also frequently mentioned in owner accounts and on-line reviews (Morabito 2012; Taraborelli 2011; Klein 2014). Post-intervention customer reviews often complain about favorite menu items no longer being available, or a new ambience different from what they like.

One frequent complaint regards hosts implementing changes that are not consistent with local tastes (McGee 2013; Dunn 2014). This is best understood within the context of entrepreneurs requiring knowledge of time and place (Hayek 1945). As Hayek (2002 [1968]) explains, the market itself is a discovery process, and human design cannot successfully replicate or replace things that evolve over time within the marketplace, which is based on the actions of millions of market participants. The idea that an outside expert can come in, spend a few days, and plan and put into effect a new business model from the top down in an unfamiliar town is similar to Hayek's (1988) argument. Hayek (1988) argues that, because of these knowledge problems, humans overestimate their potential to design systems from the top-down. While Hayek's work is obviously framed in a critique of coercive central planning, his recognition of

the local knowledge that exists in time and place and the evolutionary nature of information through competition apply equally to our current analysis.

The fact that the majority of businesses actually experience worse customer reviews after the interventions suggests that this lack of knowledge of time and place is relevant.[14] The hosts sometimes claim in interviews or follow-up episodes that the failures after show are caused by owners not following through on the changes, of which many do not. To temporarily avoid this, *Kitchen Nightmares* contractually obligates the establishments to serve the new menu for a few months after the show, in an attempt to prevent the reversion (Walthall 2011). Our analysis provides some insight on two reasons why establishments sometimes abandon the changes made by the shows. The owners and employees in some cases feel like the changes were forced on them, so they do not take ownership of the new ideas; and because the changes result in complaints and lost business from existing regular customers, hurting their post-show revenues. In any case, it would make sense to abandon changes which have clearly led to declining sales or to alienating a large segment of regular customers.

### *E. Contrived personal drama*

The dynamics that make the best TV drama for viewers include argument and infighting among employees, owners and employees resistant to change, and incompetent owners that do not care about customers or cleanliness. It seems that the shows pick failing businesses, and let personal drama playout in a way that contains elements of both surprise and suspense. These are important elements of entertainment demand (Bizzozero, Flepp, and Franck 2016).

[14] The fact that the hotels do not suffer the review decline is also consistent with this. Hotels do not cater to local tastes or preferences, but to those of diverse travelers. It is easier for a well-traveled host to know what travelers prefer than to know what the residents of a specific town would prefer to eat.

One example of this is that in several of the shows, the host visits and tries the products (food, cocktails) prior to implementing changes. In almost every episode of *Bar Rescue*, *Restaurant: Impossible*, and *Kitchen Nightmares*, an early segment of the show focuses on the host (or his representatives) trying out food or drink selections from the menu. Almost without exception, the host comments on how terrible the food/drink is, in some cases spitting-out or vomiting food. The episode typically ends with customers commenting on how much the food or drinks have improved as a result of the intervention.

In other cases, people are sent into establishments to order cocktails that the bartenders do not know in an attempt to embarrass employees. These encounters are used as examples of poor training, and the host then focuses on fixing these problems that are created, rather than the ones actually plaguing the business. Saving a failing business requires assessing the true problems and allocating the scarce resources available to repair and fix the most important issues. Having a successful TV show requires creating dramatic scenes and allocating resources to highlight the products of the show's sponsors.

Several of the shows also feature "stress tests" prior to the renovation, in which the business is flooded with substantially more customers than is normal. As would be expected, the establishment often runs out of plates and glassware, has abnormally long ticket/service times, quality and cleanliness standards decline, and employees (and owners) become stressed and overwhelmed. The situation often creates dramatic TV scenes of customers complaining and employees and owners arguing. These are then portrayed as the problems needing to be fixed by the host, and hours of training are then conducted as part of the episode to get the employees to serve large numbers of customers more rapidly. The issue is that these are not the normal problems occurring on a daily basis in the establishment. These businesses are not failing

because they cannot handle high volumes of customers; rather, the *lack* of customers is the problem! [15]

Based on the legal court documents, published first-hand accounts from owners or employees, and our own personal off-the-record interviews of owners and employees, it is clear that, to some degree, all of the shows use selective editing, scripted or enticed performances, hired actors, post-filming voice overs, and staged problems to increase the drama and "shock" factor for television viewers.[16] Problems are made to appear worse or more substantial than is actually the case and shows focus on exacerbating inter-personal relationship drama that can subsequently be "solved" by the show's host.

### *F. Summary*

In this section we have highlighted some of the elements common to "save the business" TV shows. Many of the shows follow a common script, which includes the selection of interesting and dysfunctional business settings and tumultuous personal relationships, flooding the businesses with more customers than they can reasonably handle, and highlighting selective fixes that often are not actually problems being experienced by the business. Many of these issues are reflective of the principal-agent problem evident by different interests of the shows' producers and the businesses they are trying to help.

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[15] A good example where the owner tries repeatedly, and unsuccessfully, to stress this to the host is the Windsor 75 episode of *Restaurant: Impossible*.

[16] See Wiser (2009), Cieslak (2016), Harrington (2012), McGee (2013), Jordan (2013), Wood (2014), Odam (2016), Murphy (2012), Reser (2016), Reddit (2013), Morabito (2012), and Fantozzi (2016), for examples. Also see owner's response to customer Michele L.'s Yelp posting on 5/31/2016 (Yelp 2016). In some cases, lawsuits provide details of these discrepancies. For examples, see Hines (2007) and Wilkes v. Bongo LLC, et al. (2014).

Our analysis suggests that businesses that participate in these shows have failure rates about twice as high as their industry averages. We do not think the shows cause the higher failure rates. Rather, pre-intervention customer reviews suggest that the businesses were more likely than average to fail, and the TV show hosts did little to change this outcome. From the show's perspective, the business' dire situations make for entertaining television, and being entertaining is the most important incentive for the shows. From the business' perspective, appearing on the show may be a last-ditch effort to survive. Certainly the business owners expect a positive publicity effect from appearing on the show; and there is little to lose. Unfortunately, the show hosts' incentives are more aligned with creating an entertaining TV show than in implementing the changes that would help the business survive. We believe this discrepancy is a clear example principal-agent problem, which, along with the hosts' lack of local knowledge, helps to explain the shows' ineffectiveness.

## VI. CONCLUSION

We have provided the first comprehensive analysis of the almost dozen shows that claim to save failing businesses. Our analysis includes compiling data on every business that has appeared on the shows, examining customer reviews, conducting phone interviews with business owners, and compiling first-hand accounts of owners, employees, and local reporters.

The most important conclusion is that these shows themselves are businesses – reality TV drama series that are influenced by their own incentives to be profitable and continue on air through increasing viewership and satisfying sponsors through highly visible product placements in the episodes. Certainly, personnel training and publicity effects can have short-term benefits to businesses profiled on these shows. However, we find that the problems portrayed are not always

representative of the true issues facing the businesses. Indeed, some real-world major issues are entirely neglected, while other problems are manufactured to increase the drama for television by editing, suggestive acting, and staging unrealistic stress tests. In some cases shows seek out and approach the businesses, again with an eye toward creating drama that makes for entertaining TV viewing. The solutions they implement suffer from a principal-agent problem and are not always the solutions best for the businesses survival, but rather create the best placements for show sponsors or build the hosts' personal brand or career. Lengthy legal contracts often prevent owners from discussing the show and their experiences, and several shows have faced lawsuits over their portrayals. Viewership is negatively correlated with the survival rate of the businesses featured on the show, providing little incentive for shows to assess their effectiveness or care about the businesses' survival rates after the interventions. There is no evidence the shows have lower failure rates in later seasons as a result of self-assessment.

While the show hosts sometimes claim the post-intervention failures are caused by owners not continuing with the changes made, we find many owners tend to revert because drastic changes result in dissatisfaction from loyal existing customers, especially when those changes suffer from local knowledge problems and lack employee or owner input.

One show, *The Profit*, has a notable difference in incentive structure as the host personally invests in the business and continues involvement into the future. As theory would predict, this show does have the lowest failure rate among major shows, and data suggests these businesses may not have been as close to failing as the ones featured on other shows.

Our research strongly suggests that principal-agent problems plague the effectiveness of "save the business" reality TV shows. However, these same problems can be factors that limit the effectiveness of real-world business consultants, local convention and visitor bureaus, or

even the Small Business Administration. Whether it is a reality TV host or a hired private sector consultant that endeavors to help a struggling business, a lack of local knowledge and a differing incentive structure can result in an outcome that is less than successful. Due to the strong financial incentives created by paid sponsor product placements and the need for drama that increases viewership, it would appear that, at best, the shows “save” their own slot on network TV and enrich the hosts, crew, and production company – rather than saving a lot of the businesses they claim to be helping.

**TABLE 1**

American "Save the Failing Business" Television Shows, as of June 2016

| Show Title, Host's Name | Network | Years Aired (First Air Date) | No. of Seasons (Episodes) | Estimated Viewers, in millions[a] |
|---|---|---|---|---|
| *Kitchen Nightmares*, Gordon Ramsay | Fox | 2007-14 (9/19/07) | 6 (92) | 3.0 |
| *Tabatha's Salon Takeover / Tabatha Takes Over*[b], Tabatha Coffey | Bravo | 2008-13 (9/21/08) | 5 (52) | 0.9 |
| *Restaurant: Impossible*, Robert Irvine | Food Network | 2011-16 (1/19/11) | 13 (160) | 1.7 |
| *Bar Rescue*, Jon Taffer | Spike | 2011-present (7/17/11) | 4 (113) | 2.2 |
| *Hotel Impossible*, Anthony Melchiorri | Travel Channel | 2012-present (4/9/12) | 7 (89) | 0.6 |
| *Hotel Hell*, Gordon Ramsay (Fox) | Fox | 2012-present (8/13/12) | 3 (16) | 4.4 |
| *Bakery Boss / Buddy's Bakery Rescue*[c], Buddy Valastro | TLC | 2013-14 (5/27/13) | 2 (13) | 0.9 |
| *Save My Bakery*, Kerry Vincent | Food Network[d] | 2013-14 (7/8/13 & 3/9/14) | 1 (10) | 0.8 |
| *The Profit*, Marcus Lemonis | CNBC | 2013-present (7/30/13) | 3 (40) | 0.6 |
| *Restaurant Redemption*, Ching-He Huang | Cooking Channel | 2013-15 (10/29/13) | 2 (26) | 0.1 |
| *Save Our Business*, Peter Jones | TNT | 2014 (2/28/14) | 1 (6) | 0.7 |

*Notes:* Episodes include some re-visits to businesses saved on previous episodes, and other special episodes.

[a] Viewership data are averages of all available data sourced from *TV by the Numbers* (http://tvbythenumbers. zap2it. com), *Son of the Bronx* (http://sonofthebronx.blogspot.com), *The Futon Critic* (www.thefutoncritic.com), and *Wikipedia* (http://en.wikipedia.org).

[b] *Tabatha's Salon Takeover* expanded to include more than just salons beginning in Season 4 and was renamed *Tabatha Takes Over*.

[c] *Bakery Boss* was renamed *Buddy's Bakery Rescue* for the second season of the show.

[d] *Save My Bakery* had a pilot episode that aired on the Cooking Channel on July 8, 2013; the remaining episodes were part of a full season that was broadcast on the Food Network starting March 9, 2014.

**TABLE 2**
Average Annual Failure Rates (AAFRs) by Industry, 2000-2015

| Industry | AAFR |
|---|---|
| All Firms | 11.8% |
| Leisure and Hospitality | 10.7% |
| Food Service and Drinking Places | 16.7% |
| Accommodations | 4.6% |

*Notes:* Calculated from U.S. Department of Labor's Bureau of Labor Statistics (BLS), Business Employment Dynamics Database, compiled from longitudinal linking of Quarterly Census of Employment and Wages data (http://www.bls.gov/bdm/charts.htm).

**TABLE 3**

*Kitchen Nightmares'* Failure Rate Details

| Season | Air Dates | No. Usable Establishment Observations | Number Closed as of June 2016 | Percentage Closed |
|---|---|---|---|---|
| Season 1 – Set 1 | 9/19/07 – 12/12/07 | 10 | 9 | 90.0% |
| Season 1 – Set 2 | 9/4/08 – 1/15/09 | 11 | 11 | 100.0% |
| *(Season 1 totals)*[a] | *(9/19/07 – 1/15/09)* | *(21)* | *(20)* | *(95.2%)* |
| Season 2 | 1/29/10 – 5/21/10 | 11 | 9 | 81.8% |
| Season 3 | 1/21/11 – 5/20/11 | 12 | 7 | 58.3% |
| Season 4 | 9/23/11 – 3/30/12 | 14 | 9 | 64.3% |
| Season 5 | 10/26/12 – 5/10/13 | 13 | 5 | 38.5% |
| Season 6 | 4/11/14 – 9/12/14 | 6 | 4 | 66.7% |
| *Totals* | | *77* | *54* | *70.1%* |
| **Analysis of Results:** | | | | |
| AAFR for show: | | | | 30.1% |
| Industry-level AAFR (Eating & Drinking Establishments): | | | | 16.7% |
| Test Statistic for $H_o$: Show AAFR = Industry AAFR: | | | | $7.778^{***}$ |
| Ratio of Show AAFR to Industry AAFR | | | | 1.80 |

*Notes:* Level of significance: * = .10, ** = .05, *** = .01

[a] The two parts of Season 1 aired nine months apart; some sources improperly count it as two separate seasons.

**TABLE 4**
Show Failure Rates

| Show Title | Average Annual Failure Rates (AAFRs) | | | | | Customer Review Scores[a] | | |
|---|---|---|---|---|---|---|---|---|
| | Sample Size (firms) | Show (S) | Industry (I) | Difference (S-I) | Ratio (S/I) | Sample Size (firms) | Pre-review Scores | Change in Avg. |
| **Food & Drinking Establishments** | | | | | | | | |
| *Bar Rescue* | 97 | 16.6% | 16.7% | -0.1% | 0.99 | 20 | 3.18 | -0.24 |
| *Restaurant Redemption* | 26 | 29.6% | 16.7% | +12.9%*** | 1.77 | 18 | 3.09 | 0.17 |
| *Kitchen Nightmares* | 77 | 30.1% | 16.7% | +13.4%*** | 1.80 | 20 | 3.45 | -0.11 |
| *Restaurant: Impossible* | 133 | 30.1% | 16.7% | +13.4%*** | 1.80 | 20 | 3.47 | -0.11 |
| **Bakeries** | | | | | | | | |
| *Save My Bakery* | 10 | 3.5% | 16.7% | -13.2% | 0.21 | 5 | 4.44 | -0.61 |
| *Bakery Boss / Buddy's Bakery Rescue* | 13 | 19.2% | 16.7% | +2.5% | 1.15 | 9 | 3.83 | -0.31 |
| **Hotels** | | | | | | | | |
| *Hotel Impossible* | 80 | 3.6% | 4.6% | -1.0% | 0.78 | 20 | 3.29 | 0.43 |
| *Hotel Hell* | 12 | 8.5% | 4.6% | +3.9% | 1.85 | 10 | 3.56 | 0.18 |
| **General / Misc.** | | | | | | | | |
| *The Profit* - Deals | 21 | 0.0% | 11.8% | -11.8%** | 0.00 | 5 | 4.23 | -0.86 |
| *The Profit* - No Deals | 9 | 0.0% | 11.8% | -11.8% | 0.00 | 4 | 3.66 | 0.13 |
| *Save Our Business* | 6 | 5.9% | 11.8% | -5.9% | 0.50 | 4 | 3.54 | -0.04 |
| *Tabatha's Salon Takeover / Tabatha Takes Over* | 50 | 8.5% | 11.8%? | -3.3% | 0.72 | 14 | 3.78 | -0.15 |

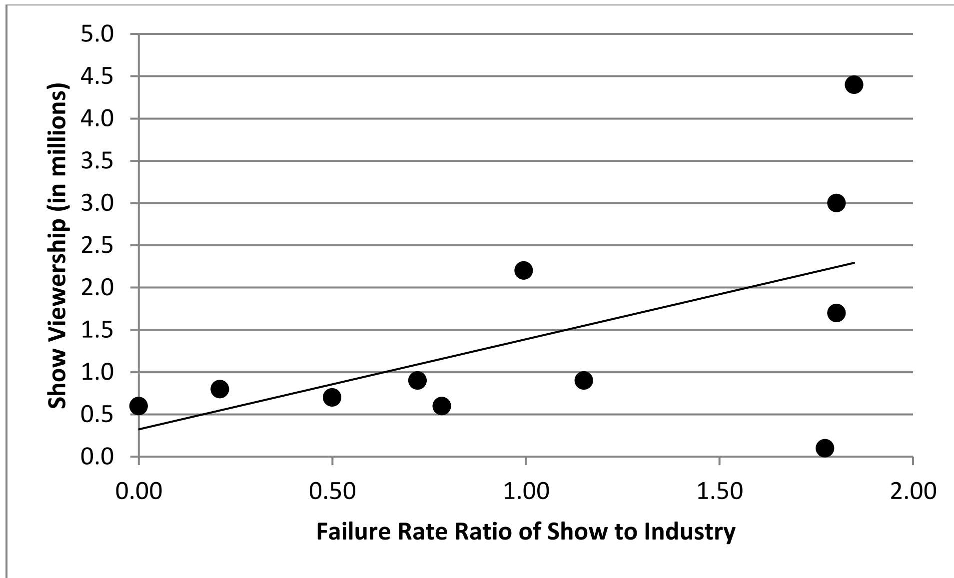
*Notes:* Level of significance: * = .10, ** = .05, *** = .01
[a] The number of customer reviews differs by establishments; see text for details. Customer review scores can range from 1 (lowest) to 5 (highest).

**TABLE 5**
OLS Model of *Post-Rating* and Probit Model of *Open*

| **Independent Variables** | **A**<br>**OLS Model** | **B**<br>**Probit Model** |
|---|---|---|
| | Dep. variable: *Post-Reviews* | Dep. variable: *Open* |
| Constant | 1.174 (0.438) | -0.042 (1.131) |
| *Show dummies* | | |
| Bar Rescue | 0.221 (0.332) | -0.098 (0.391) |
| Hotel Impossible | 0.864*** (0.325) | 0.112 (0.657) |
| Kitchen Nightmares | 0.505 (0.332) | -0.004 (0.408) |
| Restaurant Impossible | 0.407 (0.320) | -0.311 (0.368) |
| Hotel Hell | 0.764** (0.344) | - |
| Save Our Business | 0.489 (0.416) | - |
| Tabatha Takes Over | 0.569 (0.370) | - |
| Restaurant Redemption | 0.487 (0.326) | - |
| Save My Business | 0.348 (0.389) | - |
| Buddy's Bakery | 0.369 (0.345) | - |
| Pre-Reviews | 0.519*** (0.081) | 0.464*** (0.177) |
| Industry-level AAFR | - | -8.889* (4.831) |
| Time Passed | - | 0.008 (0.024) |
| *Year dummies* | | |
| 2009 | 0.260 (0.661) | - |
| 2010 | 0.122 (0.434) | -1.061 (1.324) |
| 2011 | -0.328 (0.249) | -1.063 (1.027) |
| 2012 | -0.247 (0.215) | 0.097 (0.696) |
| 2013 | -0.036 (0.132) | -0.086 (0.383) |
| $N$ | 145 | 145 |
| $F$ | 4.53 | - |
| $R^2$ | 0.3613 | - |
| LR- $\chi^2$ | - | 28.64 |
| Pseudo $R^2$ | - | 0.1544 |

*Notes:* Level of significance: * = .10, ** = .05, *** = .01
Standard errors are shown in parentheses.

**FIGURE 1**
Shows' Failure Rates versus Viewership



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