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Business Benefits of Banning Smoking in Restaurants

Introduction

The ban on smoking is a designation that prohibits smoking tobacco and similar products under certain conditions. Different countries have different restrictions and penalties. Smoking ban may be declared owner of the premises or to the laws of the country.

The main objectives of the smoking ban are fire safety and protection of health smoking. For the rest, include preserving the purity of the premises and a great performance smoking employees.

Individual American cities and states have banned smoking in public places, such as bars, restaurants, offices. The purpose of the ban was intended to protect citizens from smoking inhalation of so-called " second-hand smoke", or second-hand smoke, which, according to many experts, is just as harmful as smoking itself. Smoking bans have reached their goal, and not only.

Earlier in the United States were allowed to smoke everywhere, including offices, bars and restaurants. However, after the results of research about the dangers of tobacco smoke to the people around the smoker, the situation has changed dramatically. Passive smoking - a forced inhalation of cigarette, cigar and pipe smoke nonsmokers. If passive smoking continues for an extended period of time, it can lead to serious health consequences. Hence the ban on smoking in public places.

However, eliminating smoking from someone else's smoke, these prohibitions and stabbed himself smoking, says a member of the Research Center on Smoking Dr. Stanton Glantz, " If we prohibit smoking in public

places, people start to smoke less, which means that cigarette sales are falling."

According to Dr. Glantz, only one ban on smoking in the workplace cigarette consumption dropped by 30%.

Today, more than two thousand American cities and counties have passed laws prohibiting or restricting smoking. For example, in New York banned smoking in all restaurants, bars and offices. The number of smokers in New York fell by half a million people in four years. In San Francisco, according to research, smoking bans have helped reduce lung cancer by 6%.

In addition, many organizations in the United States prohibit smoking in the workplace. David Spalding smoked for twenty years, but was forced to quit because the organization in which he works - medical insurance company - announced a ban on smoking in the workplace and in the vicinity of the building. If not rigid company policy regarding smoking, said David, he would have smoked so far: " I did not want to get into the car and go from work to smoke. So I had to throw in the end. "

Vice President Dr. Mark Manley says David Spaulding - not the only example : " When we announced the decision to ban smoking, the total number of smoking employees reached 18%. Today, one year later, their number had fallen to 15 % . "

In most areas, caught up in the prohibitions, the most ardent opponents of the new rules have become the owners of bars and restaurants are afraid of losing customers. However, studies in five states where there is a ban on smoking, showed that the bans had no effect on the income of catering establishments.

In this research paper we will analyze business benefits of banning smoking in restaurants. We will discover, how the effect of banning affects restaurants attendance and income

Hypothesis

There are three hypothesizes in our research work:

- The total level of satisfaction before smoking banning was lower than after.
- The average restaurant attendance before banning smoking was lower than after banning.
- The average check after banning smoking is higher than before banning

Sample Selection

The samples were constructed based on the survey of a number of restaurants around the United States.

The sample frame is data for all restaurants in the United States, which will be described below.

The sampling procedure was systematic. Restaurants were chosen in similar places with the same level of service and price category (all other conditions, except for the test categories are assumed to not influence the results of the study). 30 restaurant patrons were interviewed prior to the ban on smoking and after smoking ban (the same 30 people), one in each restaurant. There were two records of data (two samples) - before banning smoking and after banning smoking. The survey consisted of the following questions:

- Total level of satisfaction (from 1 to 10)
- Food quality satisfaction (from 1 to 10)
- Cleanliness (from 1 to 10)

- Courtesy of the restaurant staff (from 1 to 10)
- The attendance rate of a restaurant, average, during a month (from 0 to 100, percent)
- Average check (in dollars)

These questions are relevant to our topic because they are extremely describing for the difference before the effect of banning smoking and after that. We expect the changes in customers' satisfaction after banning smoking and some changes in financial results for restaurant holders – and our questions investigate this very clearly.

The administering of the surveys was done by telephone (to restaurants' administration, related to the questions #5 and #6 and) and by personal in-home (in-restaurant) method (to the randomly chosen client, for questions #1, #2, #3 and #4). The respondents evaluated their levels of satisfaction between 1 and 10 by their own judgment.

The result of the survey is below:

Before smoking banning

After banning smoking

Descriptive Statistics

We begin with descriptive statistics – measures of central tendency, measures of variability and histograms, bar charts, scatterplots, etc.

The descriptive statistics before smoking ban is in the table below:

Descriptive Statistics: Total level ; Food quality; Cleanliness;

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1
Total level of satisfact	30	0	6,367	0,301	1,650	2,000	5,000
Food quality	30	0	5,900	0,340	1,863	2,000	5,000

Cleanliness 30 0 6, 767 0, 351 1, 924 1, 000 6, 000

Courtesy of the restaura 30 0 6, 233 0, 338 1, 851 3, 000 5, 000

The attendance rate 30 0 65, 83 2, 87 15, 74 25, 00 56, 00

Average check 30 0 245, 83 4, 62 25, 33 185, 00 230, 00

Variable Median Q3 Maximum

Total level of satisfact 6, 000 7, 000 10, 000

Food quality 5, 500 7, 250 10, 000

Cleanliness 7, 000 8, 000 10, 000

Courtesy of the restaura 6, 500 7, 250 10, 000

The attendance rate 66, 00 75, 50 96, 00

Average check 247, 50 256, 25 295, 00

And for the data after smoking banning:

Descriptive Statistics: Total level ; Food quality; Cleanliness;

Variable N N* Mean SE Mean StDev Minimum Q1

Total level of satisfact 30 0 7, 267 0, 267 1, 461 4, 000 6, 000

Food quality 30 0 7, 300 0, 300 1, 643 4, 000 6, 000

Cleanliness 30 0 7, 733 0, 325 1, 780 3, 000 7, 000

Courtesy of the restaura 30 0 6, 400 0, 338 1, 850 3, 000 5, 000

The attendance rate 30 0 73, 07 2, 69 14, 71 37, 00 65, 00

Average check 30 0 259, 83 4, 34 23, 80 195, 00 245, 00

Variable Median Q3 Maximum

Total level of satisfact 7, 000 8, 000 10, 000

Food quality 7, 000 9, 000 10, 000

Cleanliness 8, 000 9, 000 10, 000

Courtesy of the restaura 6, 500 8, 000 10, 000

The attendance rate 74, 50 81, 25 99, 00

Average check 262, 50 271, 25 300, 00

So, there are many changes we can observe after smoking ban was provided.

The mean value of total satisfaction was 6. 367 before and 7. 267 after banning

It might be, that the increasing of average food quality and cleanliness affected the total level of satisfaction - these values are significantly higher.

The level of courtesy of the staff has not significantly changed.

The mean attendance rate and average check values are also higher.

Hypothesizes testing

- The total level of satisfaction before smoking banning was lower than after.

Results: Since p-value is lesser than 0. 001 and lesser than alpha level of significance, we have enough evidence to reject the null hypothesis and state, that there is a significant difference between levels of total satisfaction before smoking ban and after it at 5% level of significance.

Conclusion: The total level of satisfaction has been increased. This might be because of perception of food taste better in smoking-free indoors.

Moreover, no smoking area positively affects the purity of the premises.

- The average restaurant attendance before banning smoking was lower than after banning.

The same way, performing 2-sample paired t-test.

Results: Since p-value is lesser than 0. 001 and lesser than alpha level of significance, we have enough evidence to reject the null hypothesis and

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state, that there is a significant difference between attendance rates before smoking ban and after it at 5% level of significance.

Conclusion: The attendance rate has increased, may be, because smokers still arrive their favorite restaurants and among new customers can be non-smokers who had never visited this restaurant before because of smoking.
- The level of income after banning smoking is higher than before banning

And again, paired t-test:

Results: Since p-value is lesser than 0.001 and lesser than alpha level of significance, we have enough evidence to reject the null hypothesis and state, that there is a significant difference between average check values before smoking ban and after it at 5% level of significance.

Conclusion: This significant difference might be explained because of the increasing of the attendance rate and overall satisfaction of restaurant.

People like to spent more time and more money in clean and comfort places.

Conclusions

As a result of testing three hypotheses, results were obtained, indicating that the ban on smoking in restaurants had a beneficial effect on the business.

After the smoking ban overall satisfaction level of customers increased, which resulted in an increase in attendance and overall occupancy of the restaurant. Customers spend more time in restaurants, because stay indoors longer harms their health. As a consequence, the average check also grew.

Limitations

1) The surveys were conducted in a limited number of regions, so the sample may not reflect the data for the restaurants, which surveys were not

conducted

2) It should be considered subjectively information submitted by the respondent, as overall satisfaction rating is his personal opinion.

3) Restriction on the use of t-test. To apply this criterion requires that the raw data had a normal distribution. In the case of a two-sample test for independent samples is also necessary to observe the conditions of equality of variances. There are, however, alternative t-test for the situation with unequal variances. The requirement of normality of data distribution is essential for accurate t- test. However, even with other data distributions may use the t-statistic. In many cases, this statistic is asymptotically standard normal distribution - $N(0, 1)$, so you can use the quantiles of this distribution. Often, however, even in this case do not use the quantile of the standard normal distribution, and the corresponding Student distribution as the exact t- test. Asymptotically they are equivalent, but in small samples, the confidence intervals of the Student distribution is wider and more reliable.

Bibliography

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Appendix #1.

Hypothesis #1 testing:

Paired T-Test and CI: Level of satisfaction before; Level of satisfaction after

Paired T for Level of satisfaction before - Level of satisfaction after

N Mean StDev SE Mean

Level of satisfaction be 30 6, 367 1, 650 0, 301

Level of satisfaction af 30 7, 267 1, 461 0, 267

Difference 30 -0, 900 0, 548 0, 100

95% CI for mean difference: (-1, 105; -0, 695)

T-Test of mean difference = 0 (vs not = 0): T-Value = -9, 00 P-Value = 0, 000

Hypothesis #2 testing:

Paired T-Test and CI: The attendance rate before; The attendance rate after

Paired T for The attendance rate before - The attendance rate after

N Mean StDev SE Mean

The attendance rate befo 30 65, 83 15, 74 2, 87

The attendance rate afte 30 73, 07 14, 71 2, 69

Difference 30 -7, 233 4, 256 0, 777

95% CI for mean difference: (-8, 823; -5, 644)

T-Test of mean difference = 0 (vs not = 0): T-Value = -9, 31 P-Value = 0, 000

Hypothesis #3 testing:

Paired T for Average check before - Average check after

N Mean StDev SE Mean

Average check before 30 245, 83 25, 33 4, 62

Average check after 30 259, 83 23, 80 4, 34

Difference 30 -14, 00 7, 12 1, 30

95% CI for mean difference: (-16, 66; -11, 34)

T-Test of mean difference = 0 (vs not = 0): T-Value = -10, 77 P-Value = 0,
000