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# Fast Food Industry and its Correlation with Obesity

***Abstract***

This paper mainly focuses on the correlation between fast food and obesity. By investigating on the current situation of fast food industry and obesity, I find that they seem to be positively proportional. Next, I analyze the differences between fast food and normal food according to some standards. Thirdly, by synthesizing other researchers' experiment result, I draw the conclusion that fast food does have correlation with obesity. What's more, I look into the marketing strategy of fast food companies in terms of consumer psychology. Moreover, I figure out some method to deal with the obesity problem brought about by fast food companies. Lastly, I will discuss if there is something that can be improved in terms of reference, proof and conclusion.

## *Introduction*

Currently, on the one hand, the fast food industry led by McDonald's, KFC and Pizza Hut are welcoming their booming decades and providing food for more than 46 million people worldwide every day (Spurlock, 2004). On the other hand, the prevalence of obesity is already above the critical threshold of 15% set by the World Health Organization (Lean, 2005). This situation gives rise to several interesting questions: what is the difference between fast food and normal food? How can fast food companies attract so many customers? Does fast food have any correlation with obesity?

Thus, in the following this paper will investigate on fast food and obesity and look for the correlation.

***Current Situation of Obesity Worldwide***

What does it mean to be overweight? What does it mean to be obese? Is there any difference? Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters ($kg/m^2$). For adults, overweight is a BMI greater than or equal to 25; while obesity is a BMI greater than or equal to 30 (World Health Organization, 2016).

With the development of economy, more and more people worldwide are able to get rid of famine and poverty. However, the problem of obesity also arises and becomes more and more serious. Worldwide obesity has more than doubled since 1980. In 2014, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 600 million were obese (World Health Organization, 2016). China, which was once considered one of the leanest countries, is fast catching up with the West in terms of prevalence of overweight and obesity (Wu, 2006). In America, even worse, approximately 72.5 million adults are obese (Morbidity and Mortality Weekly Report, 2010).

As a matter of fact, government has already get down to deal with the obesity problem: Chinese government has already released “Chinese blue book of obesity prevention and control” while the US government has already spent $147 billion merely on the annual medical costs of obesity. However, “Past efforts and investments have not been adequate” (Morbidity and Mortality Weekly Report, 2010), despite all the action on obesity, the obesity rate in the China and America still increased

significantly during recent years. Worse still, this is just a small reflection of the serious obesity problem worldwide.

***Current Situation of Fast Food Industry***

On the one side, more and more people are troubled by obesity. On the other side, fast food industry is welcoming its booming period. According to *Oxford Advanced American Dictionary*, "fast food" is hot food that is served very quickly in special restaurants, and often taken away to be eaten in the street (*Oxford Advanced American Dictionary*, 2017). Despite the fact that obesity problem gets more and more serious, fast food industry seems to welcome a globally booming period. Consider the example of McDonald's whose golden arch has almost become the globally recognized symbol of fast food restaurants (Zhong & DeVoe): it alone operates more than 30,000 joints in over 100 countries on 6 continents and feeds more than 46 million people worldwide every day, which is more than the entire population of Spain (Spurlock, 2004). And since 2015, McDonald's global comparable sales has increased 1.5%, 2.7% and 3.4% respectively (McDonald's Corporation, 2017). Actually, the increment in McDonald's global comparable sales is just a common example of the booming fast food industries. And globally, the fast food industry generates $5.1 billion in sales per year (Alter & Eny, 2005). Behind the boom of fast food industry, it is not hard to tell that the powerful fast food industry has, somehow, shifted our people's eating habits just over the past few decades.

However, when it comes to fast food, people will often think about another phrase: "junk" food. Why do we often call fast food "junk food"? What is the difference between fast food and "junk" food? Is fast food really "junk" food? In order to answer these questions, let us first talk about what the difference is between fast food and normal food? Definitely, from the name, we know that fast food is

served faster, but is there any difference in terms of nutrition? According to an experiment on the difference between fast food, table service food and home food carried out by James K. Binkley, we find a table which can summarize the data and results:

Table 1

Proportion of food items, grams, and calories, by source, for CSFII 1994-1946 data

| Source | Items | Grams | Calories |
|---|---|---|---|
| Home | 0.730 | 0.735 | 0.700 |
| Table service | 0.067 | 0.061 | 0.070 |
| Fast food | 0.062 | 0.068 | 0.096 |
| Other | 0.141 | 0.135 | 0.134 |

Source: Binkley, James K. “Calorie and Gram Differences between Meals at Fast Food and Table Service Restaurants.” Review of Agricultural Economics, vol. 30, no. 4, 2008, pp. 750–763, Table 1.

Table 2

Average energy density (calories/g), item size, and items per meal of homemade food, table service food and fast food among children, teenagers and adults, 2008

| | Breakfast | | | Lunch | | | Dinner | | |
|---|---|---|---|---|---|---|---|---|---|
| | Density | Items | Grams/Item | Density | Items | Grams/Item | Density | Items | Grams/Item |
| Children | | | | | | | | | |
| Home | 1.17 | 3.17 | 98.75 | 1.34 | 4.08 | 87.08 | 1.19 | 4.27 | 98.41 |
| Table service | 1.48 | 4.90 | 93.51 | 1.44 | 5.14 | 88.06 | 1.39 | 5.17 | 98.15 |
| Fast food | 1.59 | 2.98 | 105.53 | 1.45 | 3.51 | 118.03 | 1.51 | 3.45 | 120.93 |
| Teenagers | | | | | | | | | |
| Home | 1.27 | 3.14 | 145.70 | 1.44 | 4.32 | 126.21 | 1.24 | 4.47 | 159.85 |
| Table service | 1.37 | 5.00 | 146.24 | 1.28 | 5.44 | 137.19 | 1.25 | 5.96 | 146.33 |
| Fast food | 1.49 | 3.24 | 171.99 | 1.36 | 4.30 | 168.56 | 1.48 | 3.86 | 204.12 |
| Adults | | | | | | | | | |
| Home | 0.86 | 4.09 | 132.45 | 1.24 | 4.59 | 117.31 | 1.18 | 5.08 | 137.12 |
| Table service | 1.09 | 5.66 | 127.08 | 1.17 | 6.14 | 119.82 | 1.22 | 7.17 | 122.77 |
| Fast food | 1.14 | 3.37 | 158.92 | 1.29 | 4.32 | 165.33 | 1.42 | 4.37 | 161.22 |

Source: Binkley, James K. “Calorie and Gram Differences between Meals at Fast Food and Table Service Restaurants.” Review of Agricultural Economics, vol. 30, no. 4, 2008, pp. 750–763, Table 8.

As Table 1 indicates that in the large majority of cases, the energy density of fast food is indeed higher than that of table service food, and far greater than that of home food. The second significant difference between fast food and the other two kinds of food in the data is that as Table 2 shows, in the large majority of cases, fast food has fewer items than table service food and home food. Moreover, the Grams/Item for fast food is usually larger than the other two. This difference, to some extent, prove that fast food usually has a bigger size. In other words, fast food is more likely to provide supersize food. Thus, as a conclusion from Table 1 & 2, fast food does contain more energy than table service food and home food. What's more, fast food is usually big in size.

However, these is one staff in the experiment above that might need further clarify. That is, the researcher does not consider the mental factor of consumers when comparing fast food, table service food and home food. In most cases, people will make their choice between fast food, table service food and home food according to their time. When people choose fast food, they are usually in a hurry so that they tend to eat less and finish their meal sooner. On the other hand, when people choose table service food and home food, they are more likely to have more time and, hence, they do not need to hurry to finish their meal and can eat more food. Thus, we can only say that under the same situation, fast food does contain more energy than table service food and home food.

From this point of view, we can see that there is not no reason that we often call fast food "junk" food: fast food usually contains much more sugar and energy than normal food. However, that is actually not enough to say one kind of food is "junk" just because of its energy. Is there any other reason that we often consider fast food to be "junk" food?

***Correlation Between Obesity and Fast Food***

Actually, the answer to the previous is yes. From the analysis above, we can conclude two main points: First, obesity has become more and more serious currently. Second, fast food is welcoming a booming period. Then, is there any correlation between obesity and fast food?

In the documentary *Supersize Me,* the director did an interesting experiment: he ate nothing but McDonald's and did not do any form of exercise for 30 days straight to see if he would suddenly be on the fast track to become an obese man and if it would be unreasonably dangerous. From the documentary, I collect several data and put them into one table:

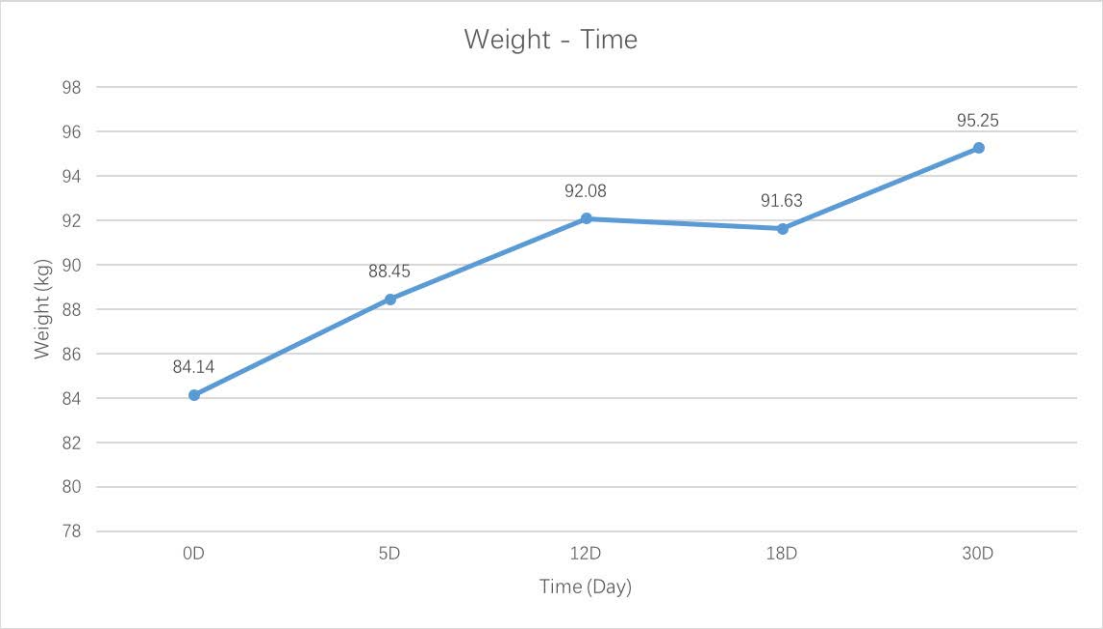
Table 3

Table of the index of body during the 30-day experiment that only have McDonald's for food.

| | 0D | 5D | 12D | 18D | 30D |
|---|---|---|---|---|---|
| Height (m) | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| Weight (kg) | 84.14 | 88.45 | 92.08 | 91.63 | 95.25 |
| BMI | 23.8 | 25 | 26 | 25.9 | 26.9 |
| Blood Pressure (mmHg) | 130/93 | - | - | 150/100 | - |
| Total Cholesterol (mg/dl) | 168 | - | - | - | 233 |
| Body Fat | 11% | - | - | - | 18% |
| Liver Function | perfect | - | - | - | fat liver |

Source: *Supersize Me*. Dir. Morgan Spurlock. Perf. Morgan Spurlock and Alexandra Jamieson. Samuel Goldwyn Films Roadside Attractions, 2004. DVD. *Supersize Me*. Milo De Kinderen, 11 Nov. 2015. Web. 16 May 2017.

Table 4




Source: *Supersize Me*. Dir. Morgan Spurlock. Perf. Morgan Spurlock and Alexandra Jamieson. Samuel Goldwyn Films Roadside Attractions, 2004. DVD. *Supersize Me*. Milo De Kinderen, 11 Nov. 2015. Web. 16 May 2017.

As we can see in Table 3 & 4, during 30 days of only having McDonald's food, Spurlock gained 11.16-kilogram weight, and his BMI raised from 23.8 which was normal to 26.9 which was overweight. His blood cholesterol shut up 65 points and reached 233 mg/dl which exceeded the normal bound 200mg/dl (World Health Organization, 2016). His liver changed from perfect to fat liver. And his body-fat percentage raised from 11% to 18%. More importantly, according to what Spurlock says in the documentary, "In only 30 days of eating nothing but McDonald's, I nearly doubled my risk of coronary heart disease. Making myself twice as likely to have heart failure. I felt depressed and exhausted most of the time. My moods swung on a dime, and my sex life was nonexistent. I craved this food more and more when I ate it. And got massive headaches when I didn't." (Spurlock, 2014) Not only did McDonald's threatened Spurlock's physical health, it also endangered Spurlock's

mental health by making him addicted to fast food. What's worse, in the final blood test, though many of Spurlock's body functions showed signs of improvement, the doctors were less than optimistic and predicted that if he kept on the diet, he would definitely develop coronary artery disease, inflammation and hardening of the liver. And what we should know is: this was just happened in 30 days! A man whose health index was perfect changed to a sick man in only 30 days by just eating McDonald's!

This correlation between obesity and fast food is also proved by other researchers. In Chen and Elizabeth's paper "The Effect of Fast Food Restaurants on Obesity and Weight Gain", she used a different way to analyze the correlation between fast food and obesity: it sought to identify the effect of increment in the local supply of fast food restaurants on obesity rates by combining georeferenced data on the location of fast-food restaurants with data about personal health, behavioral, and neighborhood characteristics. As a result, they found that decreasing access to fast food lowers BMI by a statistically significant (Chen, Susan Elizabeth, et al., 2013). While Janet Currie mainly focuses on how changes in the supply of fast food restaurants affect weight outcomes of three million children and three million pregnant women. In their experiment, they found that among ninth graders, a fast food restaurant within 0.1 miles of a school resulted in a 5.2 percent increase in obesity rates. Among pregnant women, a fast food restaurant within 0.5 miles of residence resulted in a 1.6 percent increase in the probability of gaining over 20 kilos (Currie, Janet, et al, 2010). The result is reasonable that adults have smaller travel cost than children and thus, are less affected by the fast food restaurant nearby. And the results contribute to the debate about the impact of fast food on obesity by providing credible evidence on magnitudes of the effect of fast food.

From the analysis above, we can draw the conclusion that there is correlation between obesity and fast food: fast food is more likely to cause obesity than other types of food. Worse still, the problems brought about obesity are tremendous: type 2 diabetes, hypertension and cardiovascular diseases, dental diseases and lead to increased risk of heart disease, kidney disease, stroke and infections (Joint WHO/FAO expert consultation, 2017). Then, how can we solve the problem?

***Solution***

Before we look for the solution to the obesity problem brought about by fast food, let us first focus on the marketing strategy of fast food companies. How do fast food companies attract so many customers?

First and foremost, they acclaim that their food is healthy and full of nutrition. For instance, in McDonald's official website, it outlines: "New Chicken Antibiotics Policy", "A Global Commitment to Sustainable Beef", "Pride in Preparation", "Commitment to Cage-Free Eggs", etc. (McDonald's Corporation, 2017) Let us first look at McDonald's word choice: "Sustainable", "pride" and "cage-free". Instead of using "reliable beef", "careful preparation" or "healthy eggs", McDonald's choose the words that show the food provided in McDonald's is more than good and healthy. To say that we are pride in preparation means that we are not only careful in preparation but also prepare in a very high standard which can make us proud. Similarly, to use cage-free eggs means that eggs that are only healthy are not our option: they must be healthy and cage-free. However, is it really the case? No. In the documentary *Supersize Me*, they randomly called 100 nutritionists all over America to see what they opinions were when it came to eating fast food, the result was: only 2 out of the 100 said you should eat fast food two times a week or more. 28 said once a week to once or twice a month. And 45 said you should never eat it. Moreover, 95 of them

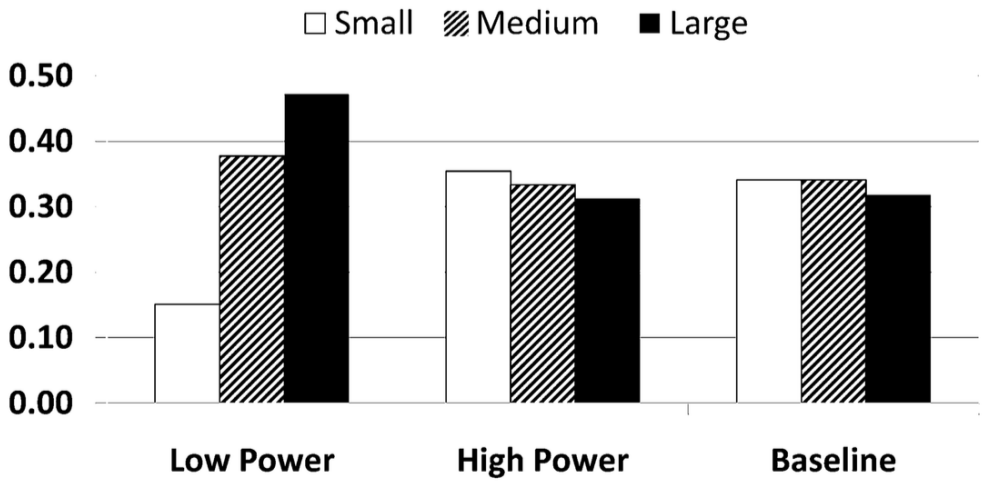
agreed that fast food was a major contributor to the obesity epidemic sweeping America (Spurlock, 2014). Moreover, Kelly Brownell, a professor in Yale Center for Eating and Weight Disorders, claims that we live in a toxic-food and physical-inactivity environment (Brownell, 2014). That is, we live in an environment that almost guarantees that we become sick. And the toxic environment is constant access to cheap, fat-laden foods that are provided by fast food companies.

Moreover, fast food companies invest a huge amount of money on advertisements to make sure that people know their products and to promote selling. In 2001, McDonald's spent $1.4 billion worldwide, Pepsi spent more than $1 billion, Hershey Foods spent under a mere $200 million internationally (Spurlock, 2014). Comparing to them, the money spent on healthy campaign is an extremely tiny cake. Besides, fast food companies use toys for children, playground inside restaurants, TV shows, coupons, present for food, etc. This marketing strategy makes fast food advertisement everywhere and makes people cannot do anything but notice the advertisements. And this is especially useful for young customers: they watch the fast food TV shows, take the fast food toys, play in the playground inside fast food restaurants, which makes them remember the warm feelings and relate this feeling with fast food companies. Time after time, they become the biggest fans of fast food companies.

What's more, fast food companies also create a new food mode: supersize food. For instance, in Burger Kings, it has kiddy size, small size, medium size, large size and supersize. In McDonald's, the supersize fries have over 600 calories which is almost 25% of the calories that one person needs a day (World Health Organization, 2016). In David Dubois's paper "*Supersize Me*: Product Size as a Signal of Status", he claims that customers' preference for supersized food and drinks has roots in the status-signaling value of larger options.

Table 5

Table of choice of smoothie of people with different power




Source: Dubois, David, et al. “Supersize Me: Product Size as a Signal of Status.” Journal of Consumer Research, vol. 38, no. 6, 2012, pp. 1047–1062. JSTOR, Figure 1, Experiment 8

“An initial experiment found that consumers view larger-sized options within a set as having greater status” (Dubois, 2012). As we can see in Table 5, people with low power tend to choose large size food. Also, due to the fact that fast food is cheap and convenient, they are quite welcome by poor people, who usually have low power. And this is exactly the may that fast food companies to promote selling.

When it comes to the solution, first of all, government should force every fast restaurant to provide nutrition lists for every customer so that the customers can have a clear idea of what they are eating. Secondly, government should, on the one hand, restrict the advertisements of fast food companies, especially the advertisements aiming for young children. On the other hand, government should invest more on promoting healthy life style. Lastly, government should restrict the size of food provided in the fast food restaurants.

***Conclusion***

Currently, on the one hand, more and more people are troubled by obesity. On the other hand, more and more fast food restaurants are showing up in our life. From the analysis, we find that these two things, obesity and fast food, do have strong correlation: fast food does contribute to obesity worldwide. In order to fix this problem, not only the government but also everyone should take their responsibility. More importantly, people should set up a view of what a healthy life style is. Only in this way can the obesity problem be finally solved.

***Discussion***

In the paper, I use the documentary *Supersize Me* as my primary source in order to show the correlation between obesity and fast food. In the documentary, Spurlock only eats McDonald's for 30 days and the result is his healthy condition becomes very bad and so does his metal condition. However, one may argue that it is because Spurlock eats too much in the documentary. What's more, which normal man will only have McDonald's supersize food to eat for a month? That is true, however, we should consider the fact that this is a documentary whose target is all people. Thus, it needs to be a little bit exaggerated in order to attract more viewers. All in all, despite the fact that it is a little bit exaggerated, it interviews a lot of professional nutritionists, doctors, and obese people which provides a credible proof that fast food does have contribute to obesity.

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