

The Impact of U.S. Quick Service on the Health and Patronage of Chinese Urban Consumers

Robert L. Getty

Information Technology and Decision Sciences, College of Business Administration
P.O. Box 305249, Denton, TX 76203-5249
Phone: (940) 565-3668, FAX: (940) 565-4935
gettyr@unt.edu

Jiaoyan Zhang

Travelweb
jiaoyanz@hotmail.com

ABSTRACT

Over the last decade there has been a rapid development of United States quick service restaurant companies such as KFC and McDonalds in China. Increasingly urban Chinese consumers patronize these restaurants as a way to experience American culture. For some it is becoming a part of their eating pattern. Recent health studies have demonstrated that nutritional diseases are increasing in China. This study accessed urban Chinese consumers' perceptions about U.S. quick service restaurants and their knowledge about the nutritional value that U.S. quick service food can provide. This study revealed that Chinese consumers' perceptions and knowledge about U.S. quick service impacts their patronage. Additionally, the study determined correlation between consumer patronage and reported health status as well as consumers' length of patronage negative influence on their health status. The results of this study will help U.S. quick service restaurants in educating consumers on nutrition and improving the menus.

INTRODUCTION

China, the largest developing country in the world, is experiencing an increase in chronic diseases (Chen et al., 1990). In many developing countries, there has been a rapid growth in the incidences of such nutritional diseases as cardiovascular disease, obesity, and diabetes (Pellett, 1989). Chen's (1990) study demonstrated that in the People's Republic of China, there is an increase in such chronic diseases. According to a health survey (Ge, Chen, & Shen, 1991) in the early 1990s in Beijing, 50% of women aged from 45 to 60 were overweight (Body Mass Index (BMI) > 25). The population, aged 15 years or older, showed prevalence of hypertension (13.5%), coronary heart disease (4%), stroke (1.2%) and diabetes (1.2%).

During the last decade, however, China witnessed a great increase in nutritional-related diseases. The increase of chronic disease indicates the disease pattern in China has changed from infectious or communicable disease to non-communicable disease. Based on the statistics from Ministry of Health in China, cancer, cerebrovascular disease and heart disease account for more than 70% of the total morality in China. Cancer increased from 36.9 cases out of 100,000 in 1957

to 125 in 1992. Coronary heart disease (CHD) has increased from no cases in 1952 to 51.29 in 1992 (Annual Report of National Health Statistics, 1992). In less than 10 years, the prevalence of diabetes in the 20-40 age group in mainland Chinese has increased by 10 fold. Studies show that a two to three fold increase in diabetes prevalence will translate to 500 fold increase in incidence of diabetic complications such as heart disease and stroke in 10-20 years (Chronic endocrine disorders, 2000).

Many U.S. fast food restaurants are now focusing on expanding into the Chinese market. China is one of the most attractive markets for global expansion (Yu & Titz, 2002). Plus, the trend for Chinese food service consumers is toward a fast food diet, convenience, quality food and value, which will give U.S. fast food restaurants enormous opportunities to meet consumers' needs (Yu & Titz, 2002). However, the fast food diet is now challenged by Chinese nutritionists for lacking nutritious value in food. They suggest that Chinese people who are already consuming fast food change back to the traditional Chinese plant-based diet. This study is expected to add to body of knowledge of Chinese consumers' perceptions of U.S. fast food restaurants and access the cause and effect of diet and health. This study is designed to access urban Chinese consumers' perceptions about U.S. quick service restaurants and their knowledge about the nutritional value that U.S. quick service can provide. Additionally, the study determined correlation between consumer patronage and reported health status.

METHODOLOGY

This study was designed to access urban Chinese consumers' perceptions about U.S. quick service restaurants and their knowledge about the nutritional value that U.S. quick service can provide. Additionally, the study determined correlation between consumer patronage and reported health status.

Research Hypotheses

The study was divided into two parts. In part I of this study, Chinese urban consumers' patronage of U.S. quick service restaurants was tested to determine if it was influenced by consumers' perception of U.S. quick restaurants and their knowledge regarding quick service nutritional values. In part II of this study, Chinese urban consumers' health status was assessed to find out if it was related to their patronage of U.S. quick service restaurants. Therefore, the following hypotheses were established to test the relationships.

H1: Chinese urban consumers' perception of U.S. quick service restaurants will have no effect on their patronage.

H2: Chinese urban consumers' knowledge regarding quick service nutritional values will have no effect on their patronage.

H3: Chinese urban consumers' patronage of U.S. quick service restaurants has no significant influence on their health.

RESEARCH DESIGN

Variables Studied

This study was divided into two parts. In part I of this study, Chinese urban consumers' patronage of U.S. quick service restaurants was tested to determine if patronage was influenced by consumers' perception of U.S. quick restaurants and their knowledge regarding quick service nutritional values. In part II of this study, Chinese urban consumers' health status was assessed to find out if it was related to their patronage of U.S. quick service restaurants.

In part I of this study, the dependent variable of consumers' patronage was correlated to the independent variable of consumers' perception and nutritional knowledge of U.S. quick service. In the consumers' perception dimension, the following items were tested to see the interrelationship with each other. These items include food taste, cleanliness of establishment, food safety, atmosphere, experience of Western culture, price, promotion, location, prompt service, nutritious food value and portion size. In the nutritional knowledge dimension, consumers' knowledge about selected nutrients was tested to see the interrelationship with each other. Chinese urban consumers' knowledge includes understanding of U.S. quick service's provision of calories, fiber, sodium, protein, calcium and fat.

In part II of this study, the dependent variable of reported health status was correlated to the independent variable of consumers' U.S. quick service restaurant patronage. Patronage was tested through frequency of U. S. quick service restaurants' patronage, portion size and length of time since first visit. The reported health status was assessed through height, weight, weight change since first visit, nutrition-related diseases history and physical activities.

POPULATION AND SAMPLE

Population

The population of this study is composed of Chinese urban consumers of U.S. quick service restaurants within two major cities of People's Republic of China. The two cities are Beijing and Chongqing. The latest statistics from the fifth Beijing census reveals that the population of Beijing has exceeded 12.8 million. Chongqing is the largest city in China in terms of population. However, the population is not exclusively urban. The urban area itself has a population not far below 18 million (Chinaonline, December, 2001).

Sample

A convenience sample was randomly chosen from the cities of Beijing and Chongqing. Attempts were made to draw equal samples from each of the cities and distribute evenly to each of the districts which is the municipal separation of the urban area. The sample size was a minimum of 250 usable surveys and a total of 500 surveys were distributed.

DATA COLLECTION

This study uses the convenience sampling process. Two hundred and fifty surveys were distributed in each individual city. Surveys were sent to three individuals in Beijing and four in Chongqing. These individuals called research cohorts were instructed on survey distribution and collection procedures. In both cities, surveys were distributed among three groups of people. The first group is the Chinese citizens working in joint venture companies. The second group includes school students and their parents. The third group includes randomly selected people in front of the U.S. fast food restaurant outlets. The respondents responded to the surveys in the presence of research cohort. Surveys were distributed and collected by the research cohort in China. The surveys contained a cover letter and questionnaire. Participation was voluntary and respondents could refuse to participate.

DATA ANALYSES

Once the data were collected, they were coded for data analyses. Data were analyzed using Statistical Product and Service Solutions (SPSS). Descriptive statistics was run to describe sample characteristics and demographic profile. A factor analysis was used to obtain a factor score for part I variables in the overall regression model. The purpose of factor analysis is to discover simple patterns in the pattern of relationships among the variables. In particular, it seeks to discover if the observed variables can be explained largely or entirely in terms of a much small number of factors (Gorsuch, 1983). What makes factor analysis different from other statistic methods is that factor analysis is used to study the patterns of relationship among many dependent variables, with the goal of discovering something about the nature of the independent variables that affect them, even though those independent variables were not measured directly. The answers obtained by factor analysis are more hypothetical than is true when independent variables are observed directly.

Path Analysis was used to evaluate impact of knowledge and consumers' perception on quick service restaurant patronage, which was correlated with the health of Chinese consumers. Path analysis provides a plausible explanation of observed correlations by showing the cause-and-effect relations between variables (Johnson and Wichern, 1988). By bringing together postulated relationships gained from knowledge of subject matter, such as review of literature and common sense with constructed diagrams from statistical inference, path analysis is a very convincing argument for causality. Path analysis modeling is able to measure the direct and indirect effects that variables have on each other.

RESULTS AND ANALYSIS

This study was designed to access urban Chinese consumers' perceptions about U.S. quick service restaurants and their perceptions about the nutritional value that U.S. quick service can provide. Additionally, the study determined correlations between consumer patronage and reported health status. A survey was developed to assess Chinese urban consumers' perceptions to achieve the purpose of the study. The survey data were analyzed using the Statistical Package for the Social Sciences (SPSS).

PRELIMINARY ANALYSIS

Demographic Characteristics of Respondents

Of all the 500 surveys that were distributed, a total of 405 were completed and returned for a response rate of 81%. Of the 405 respondents, 198 (49%) were Beijing residents and the rest of 207(51%) were from Chongqing. Two hundred and ten of the respondents (51.9%) were females and 195 (48.1%) were males. The average age was 26 years old. Almost half of the respondents (43%) were students, followed by professionals of IT, engineering industry (18%), business-related jobs (14%) and public officials (12%). Over half of the respondents (53.8%) use public transportation such as bus or subway as their major transportation mode. Walking ranked second (32.6%). Respondents (53%) had a bachelor's degree, and 43.2% of them had high school degree or less. The majority of respondents had no children in their families, which accounted for 80.2%. Over half the respondents reported their household annual income was less than 10,000RMB (\$1,250) (53.8%), and 18.8% of them with between 10,000RMB and 20,000RMB (\$2,500).

Data Reduction

Data reduction was conducted by using factor analysis. The instrument was designed to include four dimensions as independent and dependent variables. They were consumers' perception of U.S. quick service restaurants, consumers' perception of nutritional values that U.S. quick service could provide, patronage (independent variable dimensions) and their reported health status (dependent variable dimension). However, the preliminary study found out that using factor analysis to regroup each individual variable is more explainable and significant in terms of their common underlying dimensions. Hair et al. (1992) described this statistical approach that is used to analyze the interrelationship among a large number of variables and find a way of condensing the information contained in a number of original variables into a smaller set of dimensions (factors) with a minimum loss of information.

Principle component analysis using varimax rotation was used for the study to explore the dimensions in the data set. A six-factor structure has been captured from the instrument.

Factor 1 contained 8 items. Food taste, food reflection of culture, food's nutritious value, food fiber content, food sodium content, food protein content, food calcium content, and food vitamin content were loaded on this factor. The percentage of variance explained by the first factor was 23.6. This factor was named **Food Benefit**.

Factor 2 contained 3 items. The U.S. quick service restaurants' cleanness, food safety and atmosphere were loaded on this factor. The percentage of variance explained by the second factor was 8.9. This factor was named **Environment**.

Factor 3 contained 3 items. The food provision of calories, food content of fat, food content of sugar were loaded on this factor. The percentage of variance explained by the third factor was 7.7. This factor was named **Food Risk**.

Factor 4 contained 4 items. Price, promotion, convenient location and quick service were loaded on this factor. The percentage of variance explained by the fourth factor was 6.4. This factor was named **Marketing Features**.

Factor 5 contained 2 items. Patronizing frequency and portion size were loaded on this factor. The percentage of variance explained by the fifth factor was 5.9. This factor was named **Values of the Products and Frequency**.

Factor 6 had length since first visit item loaded by itself. The percentage of variance explained by the sixth factor was 4.9. This factor was named **Length of Patronage**.

After the factor analysis, reliability test was conducted. Coefficient (Cronbach's) Alpha is a measure of reliability or internal consistency (Cronbach, 1951). Values of Cronbach's Alpha of .50 or above, is consistent with the recommended minimum values stated by Nunnally (1967). Cronbach's alpha indicating reliability for each factor groupings showed that four factors were acceptable level of alpha, factor 1 Food Benefit ($\alpha=.8171$), factor 2 Environment ($\alpha=.7160$), factor 3 Food Risk ($\alpha=.6825$) and factor 4 Marketing Features ($\alpha=.5102$). The Cronbach's alpha for factor 5 Value of Products and Frequency was .3132 and there was only one item loaded in factor 6 Length of Patronage so that the reliability test was unable to be conducted. However, factor 5 and 6 was not dropped out from further regression analyses because factor 5 contained only two items which could explain the relatively low value of Cronbach's alpha.

DATA ANALYSIS AND RESULTS

Data Analysis

The data from the survey were analyzed using multiple regressions to develop a path analysis diagram. In order to complete this path diagram, seven regression equations were analyzed. Each of variables was compiled from factor analysis and computed from various questions in the survey instrument. Food Benefit includes food taste, food reflection of culture, food's nutritious value, food fiber content, food sodium content, food protein content, food calcium content, and food vitamin content. Environment includes the U.S. quick service restaurants' cleanness, food safety and atmosphere. Food Risk includes the food provision of calories, food content of fat, food content of sugar. Marketing Feature includes price, promotion, convenient location and quick service. Values of the Products and Frequency includes patronizing frequency and portion size. Length of Patronage includes length since first visit. Best Health was calculated by adding BMI and Health Index. BMI was obtained by dividing the weight in kilograms by the square of the height in meters. Health Index was achieved by adding weight score which was weight gain scale and activity level. The more physical activity, the more increase on Health Index.

Successive regressions of these relationships were completed. In the path diagram, the endogenous variables—variables that are affected by other variables was Food Benefit, Environment, Food Risk, Marketing Features, Values of Products and Frequency and Length of Patronage. Each endogenous variable was regressed upon all the exogenous variables using backward elimination method. After each regression was run, the exogenous variables were

examined, and the one which p value is greater than .1 was retained. This process eliminated only one variable at a time. Path Analyses of the variable relationships are depicted in Figure 1.

HYPOTHESES TESTING

H1: Chinese urban consumers' perception of U.S. quick service restaurants will have no effect on their patronage. Based on regression of perception of quick service restaurants vs. patronage, the hypotheses had been rejected. Consumers' perception of U.S. fast food's good taste and its culture influence and nutritious value had effect on their length of patronage.

H2: Chinese urban consumers' perceptions regarding quick service nutritional values will have no effect on their patronage. Based on regression of perception of fast food nutrition vs. patronage, the hypotheses had been rejected. Consumers' knowledge of U.S. fast food's provision of large amounts of fiber, protein, calcium, sodium, and vitamin had effect on their length of patronage.

H3: Chinese urban consumers' patronage of U.S. quick service restaurants has no significant influence on their health. Based on regression of consumers' patronage, perceptions with health, the hypotheses had been rejected. Consumers' awareness of U.S. fast food's provision of large amounts of calories, sugar and fat had effect on their health status. In addition to that, consumers' length of U.S. quick service restaurants patronage had significant influence on their health status too.

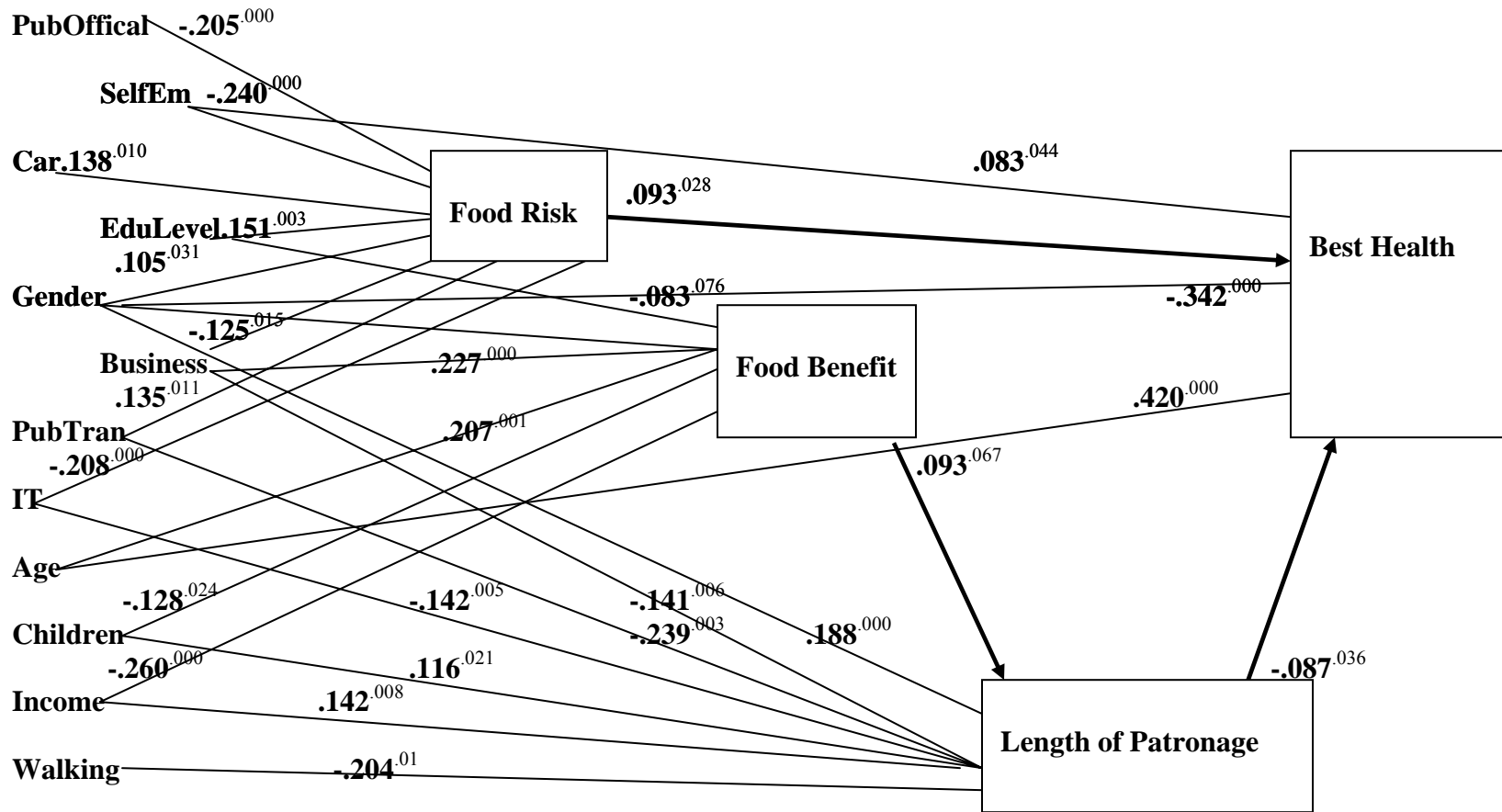


Figure 1: Patronage and Health Path Diagram. Includes standardized regression coefficients and associated p-values.

CONCLUSION

Urban Chinese consumers have a positive perception on the environment of U.S. quick service restaurants. These environment factors include the atmosphere and cleanliness of the establishments. They believe that U.S. quick service restaurants can provide them with a nice atmosphere and a clean environment for the dining experience. Also they are satisfied with the safety of U.S. fast food. Chinese consumers believe that it was convenient for them to access U.S. quick service restaurants which indicated the successful selection of the location. These restaurants are doing a good job in providing them quick service. These positive perceptions are associated with the famous business philosophy of U.S. quick service restaurants, QSC & V, or quality, service, cleanliness, and value (Yan, 1997). Their promotions of this business philosophy and the corporation image have proved to be successful. One of the reasons why consumers have positive perceptions of restaurants' quality, service, cleanliness and value is the easy accessibility of the companies' business philosophy. The information about U.S. quick service restaurants can be easily accessed from short booklets at each establishment which sketches the history of the American-based corporations and emphasizes their efforts to achieve their QSC & V business philosophy (Yan, 1997). Consumers' confidence of U.S. fast food safety are primarily due to their local strategy. This strategy to promote the corporation's image is the five-minute tour of kitchen which is provided upon request (Yan, 1997). Consumers can be shown the places where employees wash their hands and the waste bins that contained food that was no longer fresh enough to meet their standards. Everything in the kitchen is highly visible and standardized, which explains the reason why consumers feel secure and safe to eat at U.S. quick service restaurants.

Urban Chinese consumers began to realize there were nutrition issues with U.S. fast food. According to this study, most consumers do not believe that U.S. fast food has nutritious value. They have a better understanding of high percentage of calories, fat and sugar that U.S. fast food contains. This perception is not consistent with the idea that Chinese media used to promote U.S. fast food as nutritious and healthy. Consumers' increasing awareness of nutrition issues with U.S. fast food may result from some Chinese nutritionist who challenges the high-calorie count and high in fat content of U.S. fast food. However, it is worth noting that consumers' knowledge on negative effects of U.S. fast food, such as high calories, high fat content and high sugar level has no impact on their patronage. On the other hand, U.S. fast food's provision of other nutrients such as vitamins, protein, sodium, fiber and calcium still remains unclear to consumers. But consumers have a positive perception of these nutrients. Consumers perceive U.S. fast food to have more a positive effect than negative on their patronage.

Based on the literature, obesity is the most commonly claimed illness that is caused by U.S. fast food (Mydans, 2003). In this study, because the respondents' cases of developing nutritional related diseases were far less significant, the diseases question was not used. However, research has shown that the weight-for-height standard which is Body Mass Index (BMI) is the most closely related to body fat content to test people's health (Wardlaw, 2000). In this study, consumers' self-reported health status was measured by BMI and their weight gain. This study concluded that consumers' awareness of the high calorie count, high fat content and high sugar level of U.S. fast food is positively related to their good health. In other words, the more consumers are conscious about the content of U.S. fast food, high in calories, fat and sugar level,

then the healthier they are in terms of body fat content. Consumers' length of U.S. quick service restaurants patronage was found to be negatively correlated with their good health. The longer that consumers had patronized U.S. quick service restaurants, the less healthier they were in terms of body fat content. However, comparing consumers' awareness of food risk in U.S. fast food and their length of patronage, age was found to be the most important determinant for body fat content.

The study showed that two demographic variables, gender and occupation (business professional) influenced their perceptions of U.S. quick service restaurants and their knowledge of U.S. fast food. Females are more likely to pay attention to the environment, atmosphere and food safety of the quick service restaurants. Females are more conscious about calories, fat and sugar of U.S. fast food. Females also care about marketing features such as location, convenience, promotion, prices and services. Additionally, females will patronize U.S. quick service restaurants longer if they find them to be satisfactory. On the other hand, males pay more attention to food taste and food benefit of such nutrients as fiber, vitamins, protein and calcium. Males normally patronize U.S. quick service restaurants more than females and purchase larger portions. Business people like the food taste, compared to other professionals. They are less likely to be concerned about U.S. fast food's calories, fat and sugar content. However, they do pay a lot of attention to marketing features such as price, promotion, place and service, which makes great sense because they are dealing with these business strategies every day. They are less likely to continue to patronize these restaurants if they find not to be satisfactory.

RECOMMENDATIONS

The recommendations for further researches are 1) list more reasons for patronage, 2) the selection of respondents could be more specific and 3) the selection of cities could be more representative. Future research should include issues such as satisfaction of U.S. fast food portion sizes. Literature reveals that U.S. quick service did not make consumers feel full; they are more like snacks than meals (Yan, 1997).

After 15 years of growth in China, U.S. quick service has achieved great success, in both marketing share perspective and in affecting consumers' lifestyle. The market in China still has room for a lot of development. The quick service industry is expected to continue to grow. Their business mode and philosophies have to be consistent with consumers' perceptions and their health awareness lifestyles.

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