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# McDonald's Users' Perceptions Of Health And Nutrition, Quality, And Value On Visit Frequency

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MCDONALD'S USERS' PERCEPTIONS OF HEALTH AND NUTRITION, QUALITY, AND  
VALUE ON VISIT FREQUENCY

A Thesis presented in fulfillment of requirements for the degree of Master of Science in the

Department of Nutrition and Hospitality Management

The University of Mississippi

By

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## ABSTRACT

With the vast amount of quick service restaurants (QSRs) that are available to consumers in the United States (U.S.), the hospitality industry has become an integral part of Americans' diet and lifestyle. This study examines how McDonald's customers' perceptions of health and nutrition, quality, and value vary demographically (gender, age, ethnicity, educational level, and body mass index [BMI]) by McDonald's visit frequency.

An online survey was employed to collect data of participants who were 18 years of age and older, McDonald's customers, and a resident of the U.S. Of the 843 respondents who filled out the survey, 607 (72%) surveys were usable. The survey consisted of 17 statements regarding McDonald's menu items, along with demographic questions, and questions regarding McDonald's visit frequency. The data were compiled and analyzed using SPSS version 24. Frequencies of participants' demographics were computed and multiple regression analyses were employed to investigate the relationship of McDonald's visit frequency among the following: demographics, perceptions of health and nutrition, quality, and value, and the 17 statements.

Findings regarding demographics only show that individuals most likely to visit McDonald's are obese and between the ages of 35-44, whereas individuals aged 55 and older are least likely to visit. When examining demographics with the three perception categories, there is a difference in significance regarding age and visit frequency: those aged 35-44 are no longer

significant, and individuals least likely to visit McDonald's are now 45 years and older; additionally, those who obese are still more likely to visit McDonald's than their BMI counterparts.

Customers who visit McDonald's most often had significantly higher perceptions of health and nutrition and quality of McDonald's food than they did of value perceptions. Lastly, results show that customers appear to frequent McDonald's for factors such as taste and the availability of healthy options, but adequate helpings, controlled product quality, and the availability of low-calorie meals are negatively associated with visit frequency to McDonald's.

## LIST OF ABBREVIATIONS

ACA	Affordable Care Act
BMI	Body mass index
CDC	Center for Disease Control and Prevention
FAFH	Food away from home
IRB	Institutional Review Board
MTurk	Amazon Mechanical Turk
QSR	Quick service restaurant
U.S.	United States

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## CHAPTER I

### INTRODUCTION

In the United States (U.S.) the fast food industry, also known as quick service restaurants (QSRs), has become an integral part of the American diet and lifestyle throughout the decades (Jang, 2015). Fast food, as defined by society, is food away from home (FAFH) that is purchased in eating establishments without wait staff, and generally offers convenience that saves the consumer time in terms of food preparation (French, Story, Neumark-Sztainer, Fulkerson, & Hannan, 2001). QSRs are also appealing to a consumer in regards to the meal items offered, such as tasty options, general healthiness, value, and overall quality (Qin, Prybutok, & Zhao, 2010). The wide availability of fast food among Americans has contributed to the increase in the overall percentage of an individual's food budget (Hamrick & Okrent, 2014) with approximately one-third of the U.S. food dollar being spent on eating out at QSRs (Morrison, 2013). Among the many reasons for the popularity of fast food in the U.S. is the widespread availability of QSRs, making visitation an easy option for many Americans (Namkung & Jang, 2007).

To put the term "wide availability of QSRs" into perspective, in 2016 there were 186,977 QSRs in the U.S. (NCES, 2017), and the revenue of all U.S. QSRs totaled roughly 234 billion dollars (Oches, 2017). Of the most well-known brand names in the world, McDonald's was the highest ranked QSR brand in terms of sales in 2016 with a brand value of approximately 36.4 billion dollars among its 14,155 total worldwide establishments (Oches, 2017).

In a national effort to aid in decreasing consumer caloric intake at QSRs, national

restaurant menu labeling was mandated in the 2010 Affordable Care Act (ACA). This policy, if implemented as written in the law, will ultimately require large chain restaurants (with more than 20 locations) to provide caloric information of menu items on the actual menu that is viewed by the consumer (U.S. Food & Drug Administration, 2014). With the aim of decreasing caloric intake, major support of this policy lies under the fundamental umbrella of transparency (Bleich, Wolfson, & Jarlenski, 2015). That is, openly providing the nutritional value of menu items so consumers have the tools to make more informed fast food purchasing decisions and to, as a result, possibly reduce their consumption of hypercaloric (Bleich et al., 2015), obesity-related foods (Breck, Cantor, Martinez, & Elbel, 2014). However, as QSRs make public the caloric information on their menu items, there is conflicting evidence as to whether or not they really make an impact on consumer purchasing behavior (Brown, 2013). The menuboard postings of caloric information takes on the assumption that consumers actually read and understand the values (Breck et al., 2014). These conflicting findings support the need for gaining a better understanding of the motivation behind fast food trends considering how much QSRs contribute to the overall food expenditures in the U.S.

Having a better understanding of the benefits of nutritious meal items in QSRs will provide ways to improve the overall quality of the American diet and may encourage the QSR industry to develop lower calorie and nutrient dense meals that are just as convenient as less nutrient dense counterparts. While the literature is comprehensive in major reasons why consumers consume QSR food, there has been little scientific research performed that examines consumers' perceptions of health- and nutrition-, combined with quality- and, value-related perceptions of QSRs. Since perception influences consumption, having a larger understanding of how QSR consumers perceive the food they consume will contribute to public and private health

efforts to better interpret current dietary practices among Americans. Therefore, the main research objective of this study is to understand whether perceived health and nutrition, quality, and value of McDonald's menu items significantly affect a customer's visit frequency at McDonald's. This study will examine the following research question: How do McDonald's customers' perceptions vary by frequency of purchasing food based on perceived health and nutrition, perceived quality, and perceived value? Particularly:

Question 1: Is there a relationship between McDonald's customer demographics (including BMI) and visit frequency to McDonald's?

Question 2: How do customer perceptions of health and nutrition of McDonald's food influence visit frequency to McDonald's?

Question 3: How do customer perceptions of quality of McDonald's food affect visit frequency to McDonald's?

Question 4: How do customer perceptions of value of McDonald's food influence visit frequency to McDonald's?

## CHAPTER II

### REVIEW OF LITERATURE

With the expansive popularity of QSRs comes extreme competition among fast food establishments to maintain satisfaction of varying preferences among its consumers (Namkung & Jang, 2007). There are several factors that influence a consumer's dietary choices such as food quality, taste, convenience, healthiness, and price/value when determining where to eat (Jang, Kim, & Bonn, 2011). All of the aforementioned factors appear to contribute to a consumer's ultimate attitude or perception, (dis)satisfaction, and likeliness to return to a fast food establishment. To better understand the main research objective of this study, perceived health and nutrition, quality, and value of McDonald's menu items will be individually discussed regarding their effect on customers' visit frequency at McDonald's.

#### Visit Frequency of QSRs

In the highly competitive QSR industry, satisfying consumers is a primary objective for a business that wishes to build visit frequency with its consumers (Soriano, 2002). Consumer satisfaction at a fast food establishment is often a predictor of loyalty and return patronage (Bowen & Chen 2001), and while there is no guarantee of a satisfied consumer's repeat visit, it is fairly evident that a dissatisfied consumer will not return (Harrington et al., 2013). Because food is a fundamental component of the QSR experience, there can be no doubt that the food itself has, and will continue to have, a major impact on consumer satisfaction and return patronage

(Jang, 2015).

One of the most prominent trends in Americans' dietary behaviors throughout the past 40 years has been the increase in consumption of FAFH (Lin & Guthrie, 2012). According to Jang (2015), this trend has been evident in both the number of times an individual eats at a QSR and the amount of foods and beverages consumed during these occasions. In addition, the increased marketing, availability, and affordability of fast food, coupled with households earning higher incomes, have prompted Americans to increasingly consume fast food (Garza, Ding, Owensby, & Zizza, 2016).

Frequency of QSRs is significantly associated with the perceived convenience and availability of QSR food (Dave, An, Jeffery, & Ahluwalia, 2009). In addition, Dave et al. (2009) explained that for individuals, the immediate rewards of a QSR meal or snack outweigh any long-term consequences they may find both financially or health-related. For instance, consumers may opt for the immediate smaller reward (i.e. taste and convenience) of an unhealthy snack over the delayed larger reward of a healthier snack not typically found at a fast food establishment of great convenience or availability (Dave et al., 2009).

A factor that influences consumer visit frequency is price, something that is a generally very important consideration among Americans (Yohn, 2012). Some consumers may believe that the prices at a QSR are not justified for common FAFH regular meals, but rather for an occasional treat; should a QSR establishment have product prices that are higher than its QSR competitors, it may drive away consumers and decrease overall visit frequency (Yohn, 2012). Yohn (2012) further mentioned that having a range of price points may be the best solution for a QSR to increase its visit frequency as to meet varying consumer budgets.

QSRs are meant to save time and increase convenience in a society that has come to

value efficiency and immediate gratification. Impulsivity is also associated with frequency of consumption at QSRs (Garza et al., 2016). The very nature of fast food implies greater convenience, which leads to a greater consumption in individuals who value accessibility, such as those who have a tendency toward immediate gratification. In this way, certain characteristics of fast food may be very attractive to individuals who are impulsive (Garza et al., 2016). Behind impulsivity, however, is the need for food that is tasty and food that can be purchased quickly (Rydell et al., 2008).

Since there is a multitude of reasons for visit frequency among Americans to QSRs, it is extremely important to understand the many factors that influence visit frequency, and why. Hence, one would surmise that the factors to be investigated in this study- health and nutrition, quality, and value- play an important role in determining a consumer's perception of their QSR experience and their resulting visit frequency.

#### Perceived Health and Nutrition of QSRs

Generally speaking, American QSR consumers who are more health conscious and have a higher visit frequency to QSRs are more critical when evaluating their fast food meals than their counterparts (Hwang, 2011). Americans have become increasingly more health conscious and in turn have increased their interest regarding nutrition in foods (U.S. Department of Agriculture, 2014), and in fast food as well. Since Americans are becoming more conscious of healthy food options at QSRs, it is important for such establishments to consider increasing the number of healthy options available to their consumers (Harrington et al., 2013).

Due to consumer demand, adding healthier, or more nutrient dense options to a menu is important for a QSR considering that copious amounts of Americans consume fast food for a

meal, snack and/or beverage (Mancino, Todd, Guthrie, & Lin, 2010). Considering the increased consumption of FAFH among American consumers (Kumcu & Okrent, 2014), QSRs have been under extreme scrutiny for contributing to obesity and related health problems (Dave et al., 2009), because FAFH typically consists of higher caloric intake and poorer quality food and poor diet quality (Hamrick & Okrent, 2014; Kumcu & Okrent, 2014; Mancino et al., 2010). Particularly, QSRs commonly serve large portion sizes of energy-dense foods that are also low in fiber and micronutrients, causing many consumers to exceed daily caloric requirements and not fulfill other nutrient requirements (Dave et al., 2009).

Regarding the relationship between FAFH and rise in obesity among consumers, there is a significant positive relationship between individuals who frequent QSR once a week or more and body mass index, or BMI (Dave et al., 2009). Although it is possible to incorporate a healthy or nutritious diet into FAFH, for the average adult one additional meal eaten away from home increases daily intake by about 134 calories and translates to roughly two extra pounds each year (Todd, Mancino, & Lin, 2010). However, despite abundant research and media reports about the unhealthy nature of fast food, Americans still frequent such establishments (Hwang & Cranage, 2010). Interestingly, research shows that up to half of American consumers consider QSRs to be a fundamental part of their everyday lives (National Restaurant Association, 2016).

Generally speaking, consumers without prior exposure to or knowledge of caloric information are likely to rely on their own personal perceptions of healthfulness of QSR menu items (Wei & Miao, 2013). Chandon and Wansink (2007) explained with the health halo effect that consumers usually underestimate caloric content of fast food menu items when the QSR itself claims to be healthy as compared to when an establishment does not claim to be healthy. For example, when customers were asked to estimate the caloric content of menu items of both



Subway and McDonald's, the customers were more likely to underestimate the caloric content of Subway's items as opposed to McDonald's menu items despite the calories of both menu items being the same. Ideally when nutrition information is not available on a menu board, consumers use their own reasoning to estimate caloric content, and this is usually prompted by cues such as the brand's perception by consumers of healthiness (Hwang, 2011).

The intention of the 2010 ACA menu labeling policy was to ultimately address the link between overweight/obesity in Americans who frequently eat FAFH (Swartz, Braxton, & Viera, 2011) the link being that consumers will hopefully choose healthier fast food items (Hwang, 2011). In response, large QSR chains have introduced new menu items that are lower in calories. However, the general caloric content of QSR meals continues to remain high (Bleich et al., 2015). Menu board calorie labeling takes on the assumption that consumers have enough knowledge of what a calorie is and also assumes that consumers read and subsequently use that information in their purchasing decision (Green, Brown, & Ohri-Vachaspati, 2015). The reality is that the general consumer might not understand the meaning or use the calorie labels (Sinclair, Cooper, & Mansfield, 2014). A systematic review of studies focusing on menu labeling in QSRs show that the calorie labeling has generally little or no effect on what consumers order and consume (Swartz et al., 2011). In fact, the calorie content or healthfulness of food items in QSRs does not appear to be a top reason for return patronage among the general population (Dave et al., 2009). More often than not, food from QSRs is generally regarded as a treat, and this may not fit with consumers' perception of a healthy meal (Lassen et al., 2016; Wei & Miao, 2013). Most consumers believe fast food to be harmful to health to some degree; yet such consumers continue to consume fast food, thus indicating that QSR menu labeling does not necessarily affect consumption or visit frequency (Musaiger, 2014). As little as eight percent of consumers are

likely to make healthy fast food choices as a result of a QSR's current calorie labeling (Breck et al., 2014).

### Perceived Food Quality of QSRs

Reported as one of the most important attributes among consumers at QSRs, perceived food quality is repeatedly an influential factor of satisfaction and return patronage (Namkung & Jang, 2007; Ponnampalani & Balaji, 2014; Qin et al., 2010; Soriano, 2002). Perceived quality can be defined as a consumer's perception of the overall superiority or worth of a product (or service) with respect to its anticipated purpose (Kwun, 2011). Namkung & Jang (2007) revealed that the term food quality encompasses a multitude of factors that ultimately influence visit frequency to any given fast food establishment. Such food quality factors include presentation (how attractively the food is presented), menu variety (the assortment of different menu items), healthy options (offering healthy and nutritious food), taste, freshness, and temperature (influencing sensory attributes like smell, sight, and taste) (Namkung & Jang, 2007). Critical to the success of a QSR, perceived food quality is a direct link between satisfaction and return patronage (Qin et al., 2010).

Since perceptions of food quality are so crucial for a QSR, Kwun (2011) explained that full service restaurants and QSRs are changing their menus to provide a more diverse variety of food to maintain consumers varying needs; most noticeable menu trends in QSRs include healthy and new and varied menu items. Offering quality fast food that is appealing to consumers and also superior to their competitors is a major challenge that faces many QSRs today; hence, offering quality food is vital to boosting the success of a QSR (Harrington et al., 2013). While dining out has become such a fundamental part of American's lifestyles, experienced consumers

now raise their expectations with regard to quality while seeking a better value for their money (Soriano, 2002).

### Perceived Value of QSRs

Perceptions of value encompass a consumer's overall assessment of both monetary and non-monetary considerations about a fast food product (or service), on the basis of an exchange between the relative benefits and the costs required to obtain such benefits (Jang, 2015). For a consumer, the price to be paid for a fast food item determines the level of quality to be demanded (Soriano, 2002). Because of this, price is another key deciding factor affecting fast food choice and QSR visit frequency (Lassen et al., 2016). Enhanced product quality and menu have advantageous effects on perceived value, satisfaction and, ultimately, on consumer attitude towards QSRs. Perceived value influences consumer satisfaction because it is ultimately what influences patronage (Kwun, 2011; Qin et al., 2010).

Perceived value, in regards to monetary price, significantly affects a consumer's purchase intention and is a major consideration factor for a consumer's meal choice (Harrington et al, 2013). The idea of perceived value has become a popular marketing topic as it is considered another primary factor that influences consumer satisfaction and ultimately visit frequency (Jang, 2015). For a QSR to have a competitive advantage in the restaurant industry, it is important that it offers food items that consumers associate with a positive perceived value and satisfaction because consumers are only going to purchase the products or services they value (Soriano, 2002). Therefore, consumer satisfaction, which translates into the more practical consideration of whether or not consumers will return to a company or recommend it to others, is essential to the success of business (Namkung & Jang, 2007). Ultimately maximizing a consumer's perceived

value is a successful strategy of a company in terms of long-term business success (Jang, 2015).

Hence, one would surmise from the literature that health and nutrition, quality, and value play an important role in determining a consumer's perception of their FAFH experience.

Therefore, it is crucial to delve deeper into consumers' perceptions of fast food attributes to better understand why they frequent QSR establishments. Particularly, the main objective of this study is to investigate whether or not perceived health and nutrition, quality, and value influence customers' visit frequency at McDonald's.

## CHAPTER III

### MATERIALS AND METHODS

#### Overview of Study Design

This was a convenience study using participants across the U.S. that sought to obtain McDonald's customers' perception regarding perceived health and nutrition, perceived quality, and perceived value of McDonald's menu and their effect on visit frequency. The study was approved by the Institutional Review Board (IRB) of the University of Mississippi.

#### Participants and Sampling Technique

Participants were recruited to participate in an online survey through Amazon Mechanical Turk (MTurk). MTurk is an online crowd-sourcing tool in which researchers are able to post surveys or other experiments and easily recruit large numbers of participants from broad demographic groups (Enochson & Culbertson, 2015). The researcher can set respondent restrictions, such as age or even residential region (Crump, McDonnell, & Gureckis, 2013). Research has lately demonstrated that MTurk is a validated tool for conducting many types of research, particularly survey research (Crump et al., 2013). MTurk is becoming a commonly used tool for research where numerous surveys consistently replicate findings from prior research (Boynton & Richman, 2014). Additionally, MTurk has been shown to be a reliable source for data gathering that lessens the potential for non-response error in online survey research (Crump et al., 2013).

Through MTurk, this study utilized a non-probability sampling. Selected participants completed screening questions that required them to be 18 years of age or older, a McDonald's customer, and a resident of the U.S. In addition, survey participants were prompted with informed consent along with contact information of the University of Mississippi's IRB prior to advancing to the survey (Appendix A). The MTurk-fielded survey provided a compensation of \$0.25 to participants upon completion. Data was collected on July 31, 2016, of which 843 participants who were McDonald's users, 18 years of age or older, and residents of the U.S. participated in the study.

#### Procedures

Prior to making available the survey to the public through MTurk, a pilot run of the survey was distributed to approximately 20 students in a Nutrition and Hospitality Management undergraduate class at the University of Mississippi. In addition, another pilot survey was distributed to roughly 30 professionals at the Institute of Child Nutrition at the University of Mississippi. The pilot helped determine an average completion time of two minutes, and consistency among answers to signify participant understanding of the statements. From the pilot, it was decided that respondents who completed the MTurk-fielded survey in less than two minutes were not usable for the data collection, along with participants who left blank or provided straight-line responses, resulting in a total of 607 (72.0%) usable surveys.

Appendix A provides the survey questions that were used in the study from previous research conducted in Italy, which has been replicated in several other European countries (Brindal, Wilson, Mohr, & Wittert, 2014; Hu, Leong, Kim, Ryan, & Warde, 2008; Lassen et al., 2016; Lee & McCleary, 2013). After reviewing the original statements for appropriateness, two

of the statements were removed from the final survey by the researchers. The two statements removed were “I am a happy customer” and “I am willing to pay more for healthy menu items” due to the researchers’ opinion that the two statements did not relate to the health and nutrition, quality, or value of the McDonald’s menu. The questionnaire consisted of three major categories: a) the 17 attribute statements using a 7-point Likert-type scale from 1 (completely disagree) to 7 (completely agree), b) demographic information (i.e. gender, age, educational level, work status, ethnicity, and self-reported height and weight), and c) frequency of purchasing food at a McDonald’s establishment.

### Study Variables

The researchers then divided the 17 statements into three categories: perceived health and nutrition, perceived quality, and perceived value of McDonald’s. These three categories were present in the original study from Italy, so the researchers kept the three categories as they fit the present study.

### Perceived Health and Nutrition

This section consisted of 10 statements to measure participants’ perceived health and nutrition of McDonald’s, specifically: “The restaurant offers nutritious products”; “The restaurant offers healthy products”; “The restaurant offers fresh food”; “The restaurant offers locally produced products”; “There is an availability of organic food”; “The restaurant offers products of controlled quality”; “There is an availability of low-calorie meals”; “There is an availability of small or half-size portions”; “The food offered is safe and sanitary”; and “The restaurant offers calorie information on the menuboard.”

## Perceived Quality

The perception of quality of McDonald's among participants was obtained using seven statements: "The food presentation is attractive"; "The restaurant serves tasty food"; "The restaurant's menu offers a wide range of choices"; "Food presentation is appropriate"; "The food is satiating (filling)"; "The restaurant is convenient"; and "The restaurant offers innovative menu items".

## Perceived Value

The last of the three categories, perceived value of McDonald's food, was attained using four statements in the survey: "The price of food is a good value for my money"; "I am prepared to wait for my food"; "The prices are very reasonable"; and "The helpings are adequate".

## Demographics

At the end of the survey, participants were prompted with self-reported demographic questions regarding their gender, age, educational level, work status, ethnicity, self-reported height and weight, as well as visit frequency.

## Visit Frequency

Participant frequency was obtained in two parts: (1) "This is the first time I have visited this (a McDonald's) restaurant" to which the individual checked "yes" or "no", and (2) "how often do you purchase food here? Choose one answer that best fits you," followed by seven choices: (1) less than once per month, (2) once a month, (3) a few times per month, (4) once per



week, (5) a few times per week, (6) every day, and (7) more than once per day.

## Analysis

The data was compiled and analyzed using SPSS version 24. Using self-reported height and weight of each participant, body mass index (BMI) was determined using the formula  $(\text{weight} \times 703) \div (\text{height}^2)$ . After participant's BMI was calculated, it was categorized into appropriate BMI classifications based on the Centers for Disease Control and Prevention (CDC) standards (underweight, normal, or overweight, or obese) (Centers for Disease Control and Prevention [CDC], 2017).

Descriptive statistics were computed on participant demographics, including their BMI, and user frequency. Then the demographics were transformed into dummy variables to use for the remaining analysis utilizing multiple regression. The first multiple regression was employed to determine the relationship between participant demographics, including their BMI, and McDonald's visit frequency. Second, a multiple regression was used to measure the relationship between the three categories and McDonald's visit frequency. Similarly, multiple regression was used to also measure the relationship between the 17 statements and visit frequency. Lastly, multiple regression was employed to investigate the relationship between participant demographics, including their BMI, the three categories, and visit frequency.

## CHAPTER IV

### RESULTS

Table 1 provides the frequencies of the participants' demographics. The sample was composed of more female participants (55.8%) than male participants (43.8%). The majority of participants were between the ages of 24-34 (34.4%), with participants 35-44 years of age being the next largest age range (24.5%). Participants 45-54 years of age were among the next largest age group (15.0%), followed by those 55 years of age or older (13.0%). Lastly, the youngest age group, 18-24 years old, was the least represented (12.9%).

Ethnicity was grouped into two categories during the analysis: White and non-White. The majority of participants were White/Caucasian (76.1%), with the remaining participants being "non-white" (23.7%). The ethnicities combined in the "non-white" category consisted of Hispanic/Latino, Black/African American, Asian/Pacific Islander, or Native American/American Indian/Other with each ethnicity not representing a large enough sample to be a single category.

Regarding the participants level of education, the two most represented groups were those with a "Bachelor's degree" (33.9%) and those with "some college or 2-year college degree" (33.8%). "Master's degree or higher" was the third largest group (19.8%) to be represented, with "high school diploma (or GED) or less" as the smallest group (11.7%). The largest participation group to a McDonald's establishment was "less than once per month" (38.6%). The next largest participant frequency included 172 participants (28.3%) who visited a McDonald's establishment a "few times per month", and 103 participants (17.0%) who visited

“once a month”. The lowest visit frequency to McDonald’s (15.7%) was “one or more times per week, or every day or more than once per day.”

Based on participant’s self-reported height and weight, the “underweight” category (those with a BMI less than 18.5) was combined with the “normal/healthy” category (BMI of 18.5-24.9) and were 43.5% of the respondents. The “overweight” category (BMI of 25.0-29.9) consisted of 30.6% of respondents, and the “obese” category (BMI of 30.0 or greater) consisted of 23.9% of the respondents.

Table 1. Frequencies of Demographic Profile of the Sample (N=607)

Characteristics	Category	N	%
Gender	Male	266	43.8
	Female	339	55.8
Age	18-24	78	12.9
	25-34	209	34.4
	35-44	149	24.5
	45-54	91	15.0
	55 and older	79	13.0
Ethnicity	White or Caucasian	462	76.1
	Other	144	23.7
Education	High school diploma (or GED) or less	71	11.7
	Some college or 2-year college degree	205	33.8
	Bachelor's degree	206	33.9
	Master's degree or higher	120	19.8
Visit Frequency	Less than once per month	234	38.6
	Once a month	103	17.0
	A few times per month	172	28.3
	Once or more per day/one-few times per week	95	15.7
BMI Status	Underweight/Normal	264	43.5
	Overweight	186	30.6
	Obese	145	23.9

BMI status scores:  
 underweight (<18.5) (n=16), normal (18.5-24.9) (n=248)

A multiple regression was conducted to compare the relationship between participants' demographics and visit frequency to McDonald's. As represented in Table 2, a significant relationship was found ( $F(11, 576) = 2.973, p < .05$ ) with an  $R^2$  of .054 between frequency and participants' demographics.

The individual predictors were further examined and indicated three significant demographic characteristics associated with visit frequency to a McDonald's establishment. Participants between the ages of 35 to 44 years old frequented McDonald's more than the other age groups ( $t = 2.086, p < .05$ ). Whereas, visit frequency to McDonald's was significantly negative among participants aged 55 and older ( $t = -2.294, p < .05$ ). Lastly, obese participants visited McDonald's more than their other BMI counterparts ( $t = 2.101, p < .05$ ).

Table 2. Relationship between Demographics and McDonald's Visit Frequency

Variable	<i>B</i>	SE <sup>b</sup>	<i>β</i>	t-value
Male <sup>a</sup>				
Female	-0.033	0.093	-.014	-0.350
18-24 years old	-0.204	0.152	-.061	-1.340
25-34 years old <sup>a</sup>				
35-44 years old	0.253	0.121	.097	2.086*
45-54 years old	-0.178	0.144	-.056	-1.241
55 years old or older	-0.355	0.155	-.105	-2.294*
White	-0.091	0.109	-.034	-0.829
Non-White <sup>a</sup>				
High school or less	0.039	0.154	.011	0.253
Some college or 2-year college degree	0.165	0.112	.069	1.467
Bachelor's degree <sup>a</sup>				
Master's Degree or higher	-0.138	0.131	-.049	-1.051
Underweight/Normal	0.131	0.109	.058	1.207
Overweight <sup>a</sup>				
Obese	0.261	0.124	.099	2.101*

$R^2 = .054$ , adjusted  $R^2 = .036$ ,  $F(11, 576) = 2.973$

<sup>a</sup> Reference group

<sup>b</sup> Standard error

\*  $p < .05$

The relationship between the 17 statements about perceptions to McDonald's food and visit frequency was analyzed. The results of the multiple regression are shown in Table 3. A significant association was found ( $F(17, 558) = 7.762, p < .001$ ), with an  $R^2$  of .191. The regression results indicated that among the 17 statements, two were positively associated with visit frequency and three were negatively associated with frequency. The two statements positively associated with visit frequency were: "the restaurant offers healthy products" ( $t = 2.169, p < .05$ ) and "the restaurant serves tasty food" ( $t = 5.466, p < .001$ ). Three statements were negatively associated with visit frequency: "there is an availability of low-calorie meals" ( $t = -2.634, p < .05$ ), "the restaurant controls the quality of its products" ( $t = -2.564, p < .05$ ), and "the helpings are adequate" ( $t = -3.501, p < .001$ ). The remaining twelve statements did not demonstrate a significant association with visit frequency.

Table 3. Relationship between Statements about McDonald's and Visit Frequency

Variable	<i>B</i>	SE <sup>a</sup>	$\beta$	t-value
<i>Constant</i>	0.963	0.349		2.760
The restaurant offers nutritious products	0.025	0.053	.036	0.482
The restaurant offers healthy products.	0.115	0.053	.163	2.169*
The restaurant offers fresh food.	0.054	0.039	.078	1.392
The restaurant offers locally produced products.	0.072	0.042	.088	1.699
There is an availability of organic food.	-0.057	0.044	-.065	-1.311
There is an availability of low-calorie meals.	-0.090	0.034	-.127	-2.634*
The food offered is safe and sanitary.	0.052	0.040	.066	1.298
The restaurant controls the quality of its products.	-0.086	0.034	-.123	-2.564*
The food presentation is attractive.	0.004	0.037	.006	0.110
The restaurant serves tasty food.	0.243	0.044	.303	5.466***
The restaurant's menu offers a wide range of choices.	-0.019	0.039	-.023	-0.502
The food presentation is appropriate.	-0.016	0.050	-.018	-0.317
The food is satiating (filling).	0.018	0.042	.021	0.427
The restaurant is convenient.	0.031	0.060	.024	0.529
The helpings are adequate.	-0.174	0.050	-.172	-3.501***
The price of food is a good value for my money.	0.080	0.053	.105	1.507
The prices are very reasonable.	0.015	0.056	.018	0.261

$R^2 = .191$ , adjusted  $R^2 = .167$ ,  $F(17, 558) = 7.762$

<sup>a</sup>Standard error

\*  $p < .05$ , \*\*  $p < 0.01$ , \*\*\*  $p < .001$



To determine the relationship between the three categories, perception of health and nutrition, quality, and value, and McDonald's visit frequency, a multiple regression was employed. The results of the regression can be found in Table 4. A significant relationship was found ( $F(3, 600) = 16.307, p < .05$ ), with an  $R^2$  of .071. Of the three categories, perceived health and nutrition ( $t = 2.557, p < .05$ ) and perceived food quality ( $t = 3.164, p < .01$ ) were significant; whereas, perceived value did not have a significant association to visit frequency.

Table 4. Relationship Between Perception of Health and Nutrition, Quality, and Value Categories and Visit Frequency

Variable	<i>B</i>	SE <sup>a</sup>	$\beta$	t-value
<i>Constant</i>	0.711	0.239		2.971
Mean Health and Nutrition	0.121	0.047	.119	2.557*
Mean Quality	0.176	0.056	.168	3.164**
Mean Value	0.036	0.048	.036	0.749

$R^2 = .075$ , adjusted  $R^2 = .071$ ,  $F(3, 600) = 16.307$

<sup>a</sup> Standard error.

\*  $p < .05$ , \*\*  $p < .01$

Dummy variables were used to determine if there were relationships between the demographic variables and the three perception categories, and McDonald's visit frequency. A multiple regression was employed; the results are represented in Table 5. A significant regression was found ( $F(14, 573) = 7.649, p < .001$ ) with an  $R^2$  of .157.

The results of this analysis yielded significant associations between participants' demographics and the three perception categories related to McDonald's visit frequency. Two of the perception categories had a significant positive relationship with visit frequency. "Perceived health and nutrition" ( $t = 3.910, p < .001$ ) and "perceived quality" ( $t = 3.538, p < .001$ ) showed a positive relationship as opposed to perceived value, which was not significant. Regarding demographics, the participants who were considered obese by their calculated BMI ( $t = 2.217, p < 0.05$ ) were positively associated with visit frequency to McDonald's. A negative association to visit frequency was found among two age groups. Those between the ages of 45 to 54 years old ( $t = -2.392, p < .05$ ), and those 55 years of age and older ( $t = -4.103, p < 0.001$ ) were significantly less likely to visit McDonald's. The other demographics did not reveal any significant associations regarding their perceptions of McDonald's and visit frequency.

Table 5. Relationship between Demographics and 3 Perception Categories, and McDonald's Visit Frequency

Variable	<i>B</i>	SE <sup>a</sup>	$\beta$	t-value
Perception Categories				
Perceived Health and Nutrition	0.189	0.048	.186	3.910***
Perceived Quality	0.195	0.055	.186	3.538***
Perceived Value	0.018	0.048	.018	0.374
Demographic Characteristics				
Female (male)	0.049	0.089	.022	0.547
Age 18-24 y (age 25-34 y)	-0.153	0.144	-.046	-1.064
Age 35-44 y (age 25-34 y)	0.199	0.115	.076	1.720
Age 45-54 y (age 25-34 y)	-0.333	0.139	-.105	-2.392*
Age 55 y and older (age 25-34 y)	-0.622	0.152	-.185	-4.103***
White (non-white)	-0.078	0.103	-.030	-0.757
High school or less (Bachelor's degree)	-0.016	0.146	-.004	-0.106
Some college or 2-year college degree (Bachelor's degree)	0.151	0.107	.064	1.418
Master's Degree or higher (Bachelor's degree)	-0.153	0.124	-.054	-1.232
Underweight/Normal (overweight)	0.118	0.103	.052	1.144
Obese (overweight)	0.261	0.118	.099	2.217*

$R^2 = .157$ , adjusted  $R^2 = .137$ ,  $F(14, 573) = 7.649$

Reference group is in parentheses.

<sup>a</sup>Standard error.

\*  $p < .05$ , \*\*\*  $p < .001$

## CHAPTER V

### DISCUSSION AND CONCLUSION

The purpose of this study was to gain a better understanding of McDonald's customer's perceptions of its meal item attributes of health and nutrition, quality, and value to better understand their impact on frequency to McDonald's. Literature has demonstrated that the aforementioned perceptions- particularly nutrition, taste, and price- play an important role in determining a consumer's FAFH experience (Jang et al., 2011). The findings of the current study provide important implications for future QSR operations and consumer marketing utilizing fast food consumer's preferences and perceptions related to visit frequency to McDonald's.

#### Study's Participants and Visit Frequency

The majority of participants in this study of McDonald's customers were White females, 25-44 years of age, with some college/2-year degree or a Bachelor's degree, overweight or obese, and frequenting McDonald's less than once per month to a few times per month. Gender differences have been identified as one of the more important personal characteristics in understanding consumer behavior (Kwun, 2011). It is interesting that in this study the majority of participants were female customers, which lies contrary to studies that have established that males consume fast food more often than females (Dave et al., 2009; Garza, et al., 2016; Nguyen & Powell, 2014). However, females tend to pay more attention to and have more concern about food choices (Kwun, 2011). Females are more likely to attach a greater importance to healthy

eating (Wardle et al., 2004) and are more apt to evaluate more foodservice attributes, such as quality and dietary attributes (Harrington et al., 2010), to form perceptions of value and satisfaction than their male counterparts (Kwun, 2011). Similar to the current study, women tend to be more likely to eat fast food due to family or friend influences (Rydell et al., 2008). According to the most recent U.S. Census Bureau, the average family consists of three to four people (U.S. Census Bureau, 2017). Since over half of the participants in the present study were between the ages of 25 and 44 years old, most likely many are parents of children. The females within that age group may be the primary food purchaser for their families, or may often be the parent who escorts their children to and from school and after-school activities than the male head of the household, resulting in higher visit of McDonald's than their male counterparts. The larger percentage of female fast food customers in this study could also signify a shift in previous fast food trends/norms of men being the primary fast food consumers, thus contributing new fast food consumer demographic data to current literature.

A consumer's educational background appears to be another important social variable that explains differences in dietary habits among individuals (Le et al., 2013). The present study demonstrated that individuals with higher education (above a Bachelor's degree) reported to have lower fast food consumption, similar to findings from Paeratakul et al. (2003). This can possibly be explained by individuals with a higher education tend to have more positive attitudes toward eating healthy than those who are less educated (Lassen et al., 2016). Increased education may likewise increase awareness of health and nutrition, and ultimately create a self-imposed healthier diet (Le et al., 2013), as they may view fast food as being unhealthful (Dave et al., 2009). On the opposite end of the educational spectrum however, this study revealed that individuals with a high school diploma or less are less likely to consume fast food, which is

contrary to findings from Garza et al. (2016). It is possible that individuals with lower levels of education may earn an income that greatly appreciates the value of fast food meals, as evidenced by Oexie et al. (2015), who reported that fast food frequency is associated with consumption among low income individuals.

Despite income, calorie labels tend to be less visible to those with high school or lower education and may attribute to their greater frequency of fast food. Those who read and understand calorie labels appear to be more educated (Elbel et al., 2013). Generally speaking, those with lower educational levels tend to have a lesser understanding of caloric content of fast food meals (Dunn, Sharkey, & Horel, 2012). It can be inferred that due to the poorer understanding of caloric content in fast food meals, those with lower educational levels are less likely to read calorie labels and be health-conscious out of mere lack of understanding of nutrition-related knowledge.

Regarding ethnicity, the findings from this study lie contrary to typical QSR characteristics that suggest that non-White individuals consume more fast food meals than those who are White, and this may be due to greater access to fast food establishments (Dunn et al., 2012) versus other types of restaurants, like casual dining. Likewise, Black individuals tend to frequent fast food more often (Nguyen & Powell, 2014) per week than their racial counterparts (Elbel et al., 2013). The frequency of visiting fast food among non-White individuals may be due to differences in socioeconomic status, fast food access, or attention to personal nutrition (Boek Bianco-Simeral, Chan, & Goto, 2012).

The significance of high visit frequency among obese McDonald's customers in this study aligns with findings from previous research; BMI and fast food consumption are positively correlated (Bowman & Vinyard, 2004; Dunn et al., 2012), particularly due to greater impulsivity

(Garza et al., 2016). Impulsivity for a food reward has been shown to be linearly correlated to BMI (Schiff et al., 2016). With the conveniences of today's lifestyles, the consumption of fast food for family meals is contributing to the increasing prevalence of obesity in adults and adolescents (Boutelle et al., 2007). The present study found that individuals within a normal/healthy BMI range consume fast food significantly less often than those in the overweight or obese category. Based on numbers alone, one-third of the respondents in this study are classified as overweight and one-quarter are classified as obese. The individuals in these weight categories are most likely to visit McDonald's, which supports previous studies that BMI is positively correlated to fast food consumption (Bowman & Vinyard, 2004; Dunn et al., 2012).

Furthermore, this study revealed that customers most likely to frequent McDonald's are those between the ages of 25 and 44 years old. Consumption of fast food tends to be more frequent for younger people (Nguyen & Powell, 2014) and decreases as people age (Dave et al., 2009). This is similar to Elbel et al. (2013) who demonstrated that younger populations, particularly 25-39 years old, are likely to consume more fast food per week, with older consumers more likely to be on a specialized diet that may result in less fast food consumption. However, this study found that the youngest age group, 18-24 years of age, had a frequency level comparable to those aged 55 and older, possibly because customers aged 16 to 24 are more likely to eat fast food because their friends or family like it, but are less likely to eat fast food because of a food establishment's nutritious offerings (Rydell et al., 2008). This may suggest that younger ages frequent fast food for reasons related to family or social reasons. Williams and Page (2011) found that Generation Y (those born between the years of 1977-1994) have a greater need to fit in and connect with their peers and enjoy social networking. Not surprising is that consumers who are older than 55 years old tend to be more health conscious when choosing



where or what to eat (Dave et al., 2009). It appears that as people age they are more concerned about their own health. Therefore, older individuals with health problems may be more likely to consider where and what to eat.

#### Menu Perceptions of Health and Nutrition, Quality, and Value and Visit Frequency

Two menu statements that showed advantageous associations to McDonald's frequency were "the restaurant offers healthy products" and "the restaurant serves tasty food". Three statements ("there is an availability of low-calorie meals", "the restaurant controls the quality of its products", and "the helpings are adequate") showed negative significance on visit frequency. In 2012, McDonald's began to voluntarily post calories on their menu boards (Strom, 2012) due to increased interest by consumers (Nielsen, 2015) and the restaurant's efforts to be more transparent about menu items (Failla, 2015). With increased consumer interest, and consumers relying on their own perceptions of healthfulness of QSR menu items (Wei & Miao, 2013), it appears from this study that McDonald's is receiving a positive impact on visit frequency for its healthy product offerings, such as yogurt parfaits, oatmeal, salads, and apple slices, among other menu items. However, due to their self-imposed menu labeling, consumers now view the actual amount of calories, which appears to be causing a negative perception of low-calorie meals, resulting in a negative effect to visit frequency. One sees that while McDonald's customers are giving McDonald's significant visit frequency for having healthy products, while they are not frequenting McDonald's when considering the calories in their menu items, possibly due to the posted calorie information. This may be encouraging consumers to choose other restaurants instead for lower calorie foods.

Competing QSRs may be perceived as providing better lower calorie menu options (like

Subway's under 500-calorie menu items). Above most QSRs, Subway has a "health halo" and is perceived as healthier than McDonald's. For example, consumers of Subway estimated 20% and 25% lower calorie content in meal options than in those served at McDonald's (Block et al., 2013). It appears that competition from other QSRs menus that are perceived as having low calorie foods is out-competing McDonald's low calorie menu items. This finding suggests that people eat at QSRs for healthy, tasty, and low-calorie products.

The lack of positive correlation with visit frequency to McDonald's product quality could be possibly due to multiple incidences of negative publicity. One such incident occurred in 2012 when McDonald's reached out to Twitter, a social media engine, for customers to share positive thoughts or stories about their experiences at the large chain restaurant. Within two hours, McDonald's took down the question because it did the opposite; it exposed a massive amount of negative comments from Twitter users (Pfeffer, Zorbach, & Carley, 2014). Another form of negative publicity for McDonald's regarded the quality of their meal items, particularly the chicken nuggets and hamburger meat, as being made from food additives that were genetically modified in the form of "pink slime", something that McDonald's did not address and change until 2012 (Madinabeitia & Gournelos, 2014). Despite the negative nature surrounding McDonald's and some of its products, customers continue to order and eat at McDonald's for reasons possibly identified in this study, like tasty and healthy menu items.

A surprising finding of the present study was the negative correlation between adequate helpings and visit frequency considering that the size of U.S. QSR menu items have increased over the years through larger products (Vermeer, Steenhuis, & Poelman, 2014). Considering the high consumption of FAFH and rise in obesity among Americans, larger portions may increase consumer perceptions of normal intake standards (Fisher & Kral, 2008). It could be expected that

consumers who prefer larger portion sizes are more prone to visiting establishments that offer large helping sizes. A consumer may also feel like larger portions are a better value for their money, as supported by Choi & Zhao (2014) who revealed that portion size of food is a critical attribute to younger age groups because they tend to consider price more than other ages. However, after the release of the documentary about McDonald's called *Supersize Me* (by Spurlock in 2004, a study presented results that nearly half of its respondents thought that large amounts of fast food generally contributed to obesity due to the high amount of calories and fat in meal items (Binkley, 2006). This may cause some consumers to visit less frequently QSRs as a whole, or establishments in which they personally believe provide larger portions than they want to consume.

Similarly, according to prior research, food items with a variety of tastes are significantly important to consumers (Roseman, Joung, Choi, & Kim, 2017), with most menu trends in QSRs including healthy and new/varied menu items (Kwun, 2011), which is supported by this present study. Not only is taste an important factor, but it is commonly an important predictor for regular fast food consumer frequency (Boek et al., 2012; Garza et al., 2016; Lassen et al., 2016; Rydell et al., 2008). Taste is a valuable tool for measuring consumer acceptance of food because it is also an important factor when choosing healthy food choices at an establishment (Choi & Zhao, 2014), thus supporting this study's findings that healthy and tasty menu items are important predictors of McDonald's customers' frequency.

#### Menu Perception Categories and Visit Frequency

Interestingly, when examining customer demographics with the three perception categories (health and nutrition, quality, and value) and the effect on visit frequency, there is a

difference in demographics regarding individuals who frequent McDonald's, particularly with those aged 35-44, as their demographic relationship to frequency is no longer significant. The high visit frequency of these customers, which is the second highest age group of study participants, may be due to the fact that they are working parents of younger children. Around 30% of children aged 4-19 years old consume fast food on a typical day in the U.S. because working parents typically have less time to prepare food for their families (Das, 2015) due to time constraints or busy schedules of the parents and/or children (Boutelle et al., 2007). Similarly, fast food establishments are common among families with children because of their convenience and low prices (Kraak, Gootman, & McGinnis, 2006). However, underneath the notion of convenience lies the marketing of fast food that both influences the preferences and consumption of fast food by children and prompts children to demand such foods from their parents (Sonntag et al., 2015). Children may be thinking of advertisements they see on television, and parents may be thinking of immediate rewards of frequenting McDonald's, such as placating or feeding their children, or the ease of obtaining meals for the family, as opposed to being swayed by their personal perceptions of its food items.

Furthermore, results from this study show that customers least likely to frequent McDonald's are those aged 45 years and older. Again this may continue to be supported by the idea that as people age, they tend to be more health conscious, thus affecting where or what they eat (Dave et al., 2009). Lastly, results are consistent within weight categories in the present study, as those who are obese are still more likely to visit McDonald's than their counterparts, even when factoring in their perceptions of McDonald's menu items. This may demonstrate that individuals who are obese may have a greater need or temptation for the immediate reward and gratification of fast food (Schiff et al., 2016).

Ultimately, the menu perception categories of health and nutrition and food quality showed a significantly positive association with McDonald's frequency. Namkung and Jang (2007) reveal that food quality encompasses many factors that ultimately influence visit frequency including presentation, menu variety, and taste. Fast food consumers tend to view such food as tempting due to its appetizing nature (Lassen et al., 2016) with a greater impulsivity associated with the purchase of such food (Schiff et al, 2016). This study shows that customers appear to frequent McDonald's for factors such as taste and the availability of healthy options, but adequate helpings, controlled product quality, and the availability of low-calorie meals may be creating a negative association between visit frequency and perceptions of McDonald's. Finally, it seems that customers, when considering McDonald's low-calorie menu items, do not visit McDonald's as frequently as they do for other attributes. This may suggest that while customers give McDonald's credit for having some healthy menu items, their visits are also influenced by other attributes, some of which may not have been asked in this study, or they may simply choose to eat at McDonald's for reasons such as impulsivity or temptation. Possibly these customers avoid McDonald's so they are not tempted to purchase their higher calorie menu items.

#### Limitations and Suggestions for Future Research

The limitations of this study relate mainly to the reliance that each participant was in fact a McDonald's customer at the time of the study survey, and that they were truthfully conveying their perceptions of McDonald's meal items. Some critics of MTurk contend that because of the generally low financial reward for participants, they may pay little attention to questions they are answering. Also, utilizing only MTurk users is a limitation, as it may not be entirely

representative of the average McDonald's population, or even the U.S. population.

However, a strength of this study is that research has shown that MTurk participants versus non-MTurk survey participants do not differ in terms of attentiveness (Bartneck, Duenser, Moltchanova, & Zawieska, 2015). Yet another strength of this study was that the sample size was large and enabled the researchers to assess food choices and perceptions in each gender, age, ethnicity, education level, and BMI separately.

Another limitation of this study is that only one fast food establishment was investigated. Future studies could use the same variables and include other QSRs, possibly including ones that may be labeled as "healthy" such as Subway to compare to McDonald's or other QSRs. Customers in the current study based their answers on perceptions from memory, such as taste and availability of low-calorie items. The results have the potential to be different if the survey was distributed in person in a McDonald's while customers are eating or making a food selection.

## Conclusion

A significant and unique aspect of this study is the effect of perceived health and nutrition and quality on McDonald's visit frequency. To the knowledge of the researchers of this study, this is the first one to analyze McDonald's customer demographics and perceptions of health and nutrition, quality, and value as they relate to visit frequency of a McDonald's establishments. The participants who visited McDonald's more often had significantly higher perceptions of health and nutrition and quality of McDonald's food. As a large stakeholder in the global QSR network, the results provided by this study can provide McDonald's additional insight on key determinants of customer frequency based on their menu, or lack thereof, to

improve upon or maintain the establishment's already existing success. Because fast food accounts for a large share of U.S. food expenditures and calorie consumption, and considering that perceived health and nutrition and quality are such crucial motivating factors behind a consumer's acceptance of fast food, it is imperative for public health efforts to influence QSR marketing standards to incorporate a variety of quality, healthy, and nutritious foods into their menus. The need for healthier and higher quality foods requires QSRs to understand and meet the needs of their consumers, including health-conscious individuals. Meeting the needs of consumers ensures more business for an establishment; however, on a deeper level, developing and marketing healthy menu items to consumers may prompt Americans to eat healthier while dining out, thus lowering obesity rates and chronic diseases in the U.S., resulting in improving society as a whole.

Based on this study's results, one could speculate whether posted nutrition information on menu boards has in fact increased customers' awareness of the amount of calories consumed when eating at McDonald's. Such information may be encouraging customers, when looking for lower calories menu items, to choose restaurants other than McDonald's when eating out. Americans' level of attention to nutritional information in restaurants may increase as the practice of posting such information becomes more common, and as awareness of calories in food increases. Whereas, there may be a certain portion of the population that simply ignores or disregards the health and/or nutrition information of food when deciding what to eat, and places more of an importance on other aspects of the food, such as taste, or the temptation for such food. From a policy standpoint, with the continued rising rates of obesity in the U.S., the issue can be partially tackled on a basic level of educating Americans what calories are, how much an individual needs and how to interpret them when eating out. While there is still more data that

needs to be collected to more accurately grasp consumer perceptions of QSRs, the end goal of this study is for the findings to contribute useful knowledge to the literature in the field of restaurant industry and nutrition research, which may help individuals eat more healthy and possible lower the rates of obesity in the U.S.



## REFERENCES

- Binkley, J. K. (2006). The effect of demographic, economic, and nutrition factors on the frequency of food away from home. *Journal of Consumer Affairs*, 40(2), 372-391.
- Bleich, S., Wolfson, J., & Jarlenski, M. (2015). Calorie changes in chain restaurant menu items: Implications for obesity and evaluations of menu labeling. *American Journal of Preventive Medicine*, 48(1), 70-75.
- Boynton, M. & Richman, L. (2014). An online daily diary study of alcohol use using Amazon's Mechanical Turk. *Drug and Alcohol Review*, 33(4), 456-461.
- Breck, A., Cantor, J., Martinez, O., & Elbel, B. (2014). Who reports noticing and using calorie information posted on fast food restaurant menus? *Appetite*, 81, 30-36.
- Brindal, E., Wilson, C., Mohr, P., & Wittert, G. (2014). Nutritional consequences of a fast food eating occasion are associated with choice of quick-service restaurant chain. *Nutrition & Dietetics*, 71(3), 184-192.
- Brown, A. (2013). In U.S., Less Than Half Look at Restaurant Nutrition Facts. *Gallup News*. Retrieved from <http://www.gallup.com/poll/163904/less-half-look-restaurant-nutrition-facts.aspx>
- Centers for Disease Control and Prevention. (2017). About adult obesity. Retrieved from <https://www.cdc.gov/obesity/data/childhood.html>
- Chandon, P., & Wansink, B. (2007). The biasing health halos of fast-food restaurant health claims: lower calorie estimates and higher side-dish consumption 242 intention. *Journal of Consumer Research*, 34, 301-314.
- Crump, M., McDonnell, J., & Gureckis, T. (2013). Evaluating Amazon's Mechanical Turk as a tool for experimental behavioral research. *PloS One*, 8(3), e57410.
- Dave, J. An, L., Jeffery, R., & Ahluwalia, J. (2009). Relationship of attitudes

- toward fast food and frequency of fast-food intake in adults. *Obesity*, *17*(6), 1164-1170.doi: 10.1038/oby.2009.26.
- De Nisco, A., & Warnaby, G. (2014). Urban design and tenant variety influences on consumers' emotions and approach behavior. *Journal of Business Research*, *67*(2), 211-217.
- Enochson, K., & Culbertson, J. (2015). Collecting psycholinguistic response time data using amazon mechanical turk. *PloS One*, *10*(3), e0116946.
- Fisher, J. O., & Kral, T. V. (2008). Super-size me: Portion size effects on young children's eating. *Physiology & Behavior*, *94*(1), 39-47.
- French, S., Story, M., Neumark-Sztainer, D., Fulkerson, J., & Hannan, P. (2001). Fast food restaurant use among adolescents: Associations with nutrient intake, food choices and behavioral and psychosocial variables. *International Journal of Obesity & Related Metabolic Disorders*, *25*(12), 1823-1833.
- Garza, K., Ding, M., Owensby, J., & Zizza, C. (2016). Impulsivity and fast-food consumption: A cross-sectional study among working adults. *Journal of the Academy of Nutrition and Dietetics*, *116*(1), 61-68.
- Green, J., Brown, A., & Ohri-Vachaspati, P. (2015). Sociodemographic disparities among fast-food restaurant customers who notice and use calorie menu labels. *Journal of the Academy of Nutrition and Dietetics*, *115*(7), 1093-1101.
- Hamrick, K., & Okrent, A. (2014). *The Role of Time in Fast-Food Purchasing Behavior in the United States*, ERR-178, U.S. Department of Agriculture, Economic Research Service.
- Harrington, R., Ottenbacher, M., & Way, K. (2013). QSR choice: Key restaurant attributes and the roles of gender, age and dining frequency. *Journal of Quality Assurance in Hospitality & Tourism*, *14*(1), 81-100.

- Hu, S., Leong, J., Kim, W., Ryan, B., & Warde, W. (2008). Senior citizens' perceived service levels in three restaurant sectors. *Journal of Foodservice Business Research, 11*(2), 202-219.
- Hwang, J. (2011). The impacts of nutrition information on consumers evaluations toward fast food meals. *ProQuest Dissertations & Theses Global*. Retrieved from <http://ezproxy.library.arizona.edu/login?url=https://search-proquest-com.ezproxy1.library.arizona.edu/docview/1468420335?accountid=8360>
- Hwang, J., & Cranage, D. (2010). Customer health perceptions of selected fast-food restaurants according to their nutritional knowledge and health consciousness. *Journal of Foodservice Business Research, 13*(2), 68-84.
- Jang, Y. (2015). Perceived value of fast-food restaurant franchises in the USA. *FIU Electronic Theses and Dissertations*. Retrieved from <http://digitalcommons.fiu.edu/etd/1823>.
- Jang, Y., Kim, W., & Bonn, A. (2011). Generation Y consumers' selection attributes and behavioral intentions concerning green restaurants. *International Journal of Hospitality Management, 30*(4), 803-811.
- Jang, S., & Namkung, Y. (2009). Perceived quality, emotions, and behavioral intentions: Application of an extended Mehrabian–Russell model to restaurants. *Journal of Business Research, 62*(4), 451-460.
- Kumcu, A., & Okrent, A. (2014). *Methodology for the Quarterly Food-Away-from-Home Prices Data*, TB-1938, U.S. Department of Agriculture, Economic Research Service.
- Kwun, D. (2011). Effects of campus foodservice attributes on perceived value, satisfaction, and consumer attitude: A gender-difference approach. *International Journal of Hospitality Management, 30*(2), 252-261.

- Lassen, Lehmann, Andersen, Werther, Thorsen, Trolle, E., ... & Tetens, I. (2016). Gender differences in purchase intentions and reasons for meal selection among fast food customers—Opportunities for healthier and more sustainable fast food. *Food Quality and Preference*, 47, 123-129.
- Lee, S., & McCleary, K. (2013). The relationship between perceived health, health attitude, and healthy offerings for seniors at family restaurants. *Cornell Hospitality Quarterly*, 54(3), 262-273.
- Lee, M., & Ulgado, F. M. (1997). Consumer evaluations of fast-food services: A cross-national comparison. *Journal of Services Marketing*, 11(1), 39-52.
- Lin, B-H., & Guthrie, J. (2012). *Nutritional Quality of Food Prepared at Home and Away from Home 1977-2008*, EIB-105, USDA, Economic Research Service. Retrieved from <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib105.aspx>.
- Madinabeitia, V., & Gournelos, T. (2014). McDonalds' Pink Slime Crisis: A Failed Campaign. Retrieved from [http://scholar.googleusercontent.com/scholar?q=cache:B8II5heTX-cJ:scholar.google.com/+mcdonalds+fake+meat&hl=en&as\\_sdt=0,25](http://scholar.googleusercontent.com/scholar?q=cache:B8II5heTX-cJ:scholar.google.com/+mcdonalds+fake+meat&hl=en&as_sdt=0,25)
- Mancino L., Todd J.E., Guthrie J., & Lin B-H. (2010). *How Food Away From Home Affects Children's Diet Quality*. ERR-104. U.S. Dept. of Agriculture, Economic Research Service
- Morrison, R. M. (2013). USDA Economic Research Service-Food Prices and Spending. Retrieved from <http://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-prices-and-spending.aspx>.
- Musaiger, A. O. (2014). Consumption, health attitudes and perception toward fast food among Arab consumers in Kuwait: Gender differences. *Global Journal of Health Science*, 6(6),

- National Restaurant Association. (2016). 2016 *Restaurant Industry Forecast*. Retrieved from [http://www.restaurant.org/Home/old\\_files/2016-Restaurant-Industry-Forecast](http://www.restaurant.org/Home/old_files/2016-Restaurant-Industry-Forecast).
- Namkung, Y., & Jang, S. (2007). Does food quality really matter in restaurants? Its impact on customer satisfaction and behavioral intentions. *Journal of Hospitality & Tourism Research*, 31(3), 387-409.
- Namkung, Y., & Jang, S. (2008). Are highly satisfied restaurant customers really different? A quality perception perspective. *International Journal of Contemporary Hospitality Management*, 20(2), 142-155.
- NCES. (2017). *Number of restaurants in the United States from 2011 to 2016*. Statista. Retrieved from <https://www.statista.com/statistics/244616/number-of-qsr-fsr-chain-independent-restaurants-in-the-us/>
- Nguyen, B. T., & Powell, L. M. (2014). The impact of restaurant consumption among US adults: Effects on energy and nutrient intakes. *Public Health Nutrition*, 17(11), 2445-2452.
- Oches, S. (2017). The QSR 50. *QSR Magazine*. Retrieved from <https://www.qsrmagazine.com/reports/2017-qsr-50>.
- Oliver, R. (1997). *A Behavioral Perspective on the consumer*. New York: Irwin-McGraw—Hill.
- Pfeffer, J., Zorbach, T., & Carley, K. M. (2014). Understanding online firestorms: Negative word-of-mouth dynamics in social media networks. *Journal of Marketing Communications*, 20(1-2), 117-128.
- Ponnam, A., & Balaji, M. (2014). Matching visitation-motives and restaurant attributes in casual dining restaurants. *International Journal of Hospitality Management*, 37, 47-57.

- Qin, H., Prybutok, V. R., & Zhao, Q. (2010). Perceived service quality in fast-food restaurants: Empirical evidence from China. *International Journal of Quality & Reliability Management*, 27(4), 424-437.
- Roseman, M., Joung, H., Choi, E., & Kim, H. (2017). The effects of restaurant nutrition menu labelling on college students' healthy eating behaviors. *Public Health Nutrition*, 20(5), 797-804.
- Rydell, S. A., Harnack, L. J., Oakes, J. M., Story, M., Jeffery, R. W., & French, S. A. (2008). Why eat at fast-food restaurants: reported reasons among frequent consumers. *Journal of the American Dietetic Association*, 108(12), 2066-2070.
- Schiff, S., Amodio, P., Testa, G., Nardi, M., Montagnese, S., Caregaro, L., ... & Sellitto, M. (2016). Impulsivity toward food reward is related to BMI: Evidence from intertemporal choice in obese and normal-weight individuals. *Brain and cognition*, 110, 112-119.
- Sinclair, S., Cooper, M., & Mansfield, E. (2014). The influence of menu labeling on calories selected or consumed: A systematic review and meta-analysis. *Journal of the Academy of Nutrition and Dietetics*, 114(9), 1375-1388.
- Soriano, D. (2002). Customers' expectations factors in restaurants: The situation in Spain. *International Journal of Quality & Reliability Management*, 19(8/9), 1055-1067.
- Spurlock, M., & Con (Firm). (2004). *Super Size Me*. New York, N.Y: Hart Sharp Video.
- Strom, S. (2012). McDonald's menu to post calorie data. *The New York Times*.
- Swartz, J., Braxton, D., & Viera, A. (2011). Calorie menu labeling on quick-service restaurant menus: An updated systematic review of the literature. *International Journal of Behavioral Nutrition and Physical Activity*, 8(1), 135.
- Tam, J. (2004). Customer satisfaction, service quality and perceived value: An integrative

- model. *Journal of Marketing Management*, 20(7-8), 897-917.
- Todd, J., Mancino, L., & Lin, B-H. (2010). *The Impact of Food Away From Home on Adult Diet Quality*, ERR-90, U.S. Department of Agriculture, Economic Research Service.
- U.S. Department of Agriculture. (2014). *American adults are choosing healthier foods, consuming healthier diets*. Washington, DC: USDA Office of Communications.
- U.S. Food & Drug Administration. (2014). *Food labeling: Nutrition labeling of standard menu items in restaurants and similar retail food establishments*. Washington, DC: Author.
- Vermeer, W. M., Steenhuis, I. H., & Poelman, M. P. (2014). Small, medium, large or supersize? The development and evaluation of interventions targeted at portion size. *International Journal of Obesity*, 38(S1), S13.
- Wei, W., & Miao, L. (2013). Effects of calorie information disclosure on consumers' food choices at restaurants. *International Journal of Hospitality Management*, 33, 106-117.
- Williams, K. C., & Page, R. A. (2011). Marketing to the generations. *Journal of Behavioral Studies in Business*, 3, 1.
- Yohn, D. (2012). How to keep 'em coming back. *QSR Magazine*. Retrieved from <https://www.qsrmagazine.com/denise-lee-yohn/how-keep-em-coming-back>



## APPENDIX

APPENDIX A: FACTORS AND MEASUREMENT ITEMS FOR MCDONALD'S USER PERCEPTIONS

Factors	Items	Operationalization
Health and Nutrition	The restaurant offers nutritious products <sup>1</sup>	Completely disagree (1)- completely agree (7)
	The restaurant offers healthy products <sup>1</sup>	
	The restaurant offers fresh food <sup>4</sup>	
	The restaurant offers locally produced products <sup>1</sup>	
	There is an availability of organic food <sup>4</sup>	
Quality	There is an availability of low-calorie meals <sup>4</sup>	Completely disagree (1)- completely agree (7)
	The food offered is safe and sanitary <sup>1</sup>	
	The restaurant controls the quality of its products <sup>1</sup>	
	The food presentation is attractive <sup>1</sup>	
	The restaurant serves tasty food <sup>1</sup>	
	The restaurant's menu offers a wide range of choices <sup>1</sup>	
	The food presentation is appropriate <sup>1</sup>	
	The food is satiating (filling) <sup>3</sup>	
The restaurant is convenient <sup>2</sup>		
Value	The helpings are adequate <sup>1</sup>	Completely disagree (1)- completely agree (7)
	The price of food is a good value for my money <sup>1</sup>	
	The prices are very reasonable <sup>1</sup>	

<sup>1</sup>References from Italy study:

De Nisco, A., & Warnaby, G. (2014). Urban design and tenant variety influences on consumers' emotions and approach behavior. *Journal of Business Research*, 67(2), 211-217.

Jang, S., Namkung, Y. (2009). Perceived quality, emotions, and behavioral intentions: Application of an extended Mehrabian–Russell model to restaurants. *Journal of Business Research*, 62(4), 451-460.

Lee, M., & Ulgado, F. M. (1997). Consumer evaluations of fast-food services: a cross-national comparison. *Journal of Services Marketing*, 11(1), 39-52.

Namkung, Y., & Jang, S. (2008). Are highly satisfied restaurant customers really different? A quality perception perspective. *International Journal of Contemporary Hospitality Management*, 20(2), 142-155.

Oliver, R. (1997). *A Behavioral Perspective on the consumer new, yew*. NY: Irwin-McGraw—Hill.

Tam, J. (2004). Customer satisfaction, service quality and perceived value: an integrative model. *Journal of marketing management*, 20(7-8), 897-917.

<sup>2</sup> Brindal, E., Wilson, C., Mohr, P., & Wittert, G. (2014). Nutritional consequences of a fast food eating occasion are associated with choice of quick-service restaurant chain. *Nutrition & Dietetics*, 71(3), 184-192

<sup>3</sup> Lassen, A. D., Lehmann, C., Andersen, E. W., Werther, M. N., Thorsen, A. V., Trolle, E., ... & Tetens, I. (2016). Gender differences in purchase intentions and reasons for meal selection among fast food customers—Opportunities for healthier and more sustainable fast food. *Food Quality and Preference*, 47, 123-129.

<sup>4</sup> Lee, S., & McCleary, K. (2013). The relationship between perceived health, health attitude, and healthy offerings for seniors at family restaurants. *Cornell Hospitality Quarterly*, 54(3), 262-273.

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