

Motivations Underlying Fast Food Consumption by Students
Attending the University of Hawai'i at Mānoa

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ABSTRACT

The purpose of this study was to explore the motivations behind fast food consumption in college students. This study analyzed the correlations between fast food consumption over the past six months as well as one month and the following variables: time constraints, price, accessibility, stress levels, and parental influences. 189 University of Hawai'i: M/o(a,)noa students participated in this study, 42 of which were Freshmen, 25 were Sophomores, 35 were Juniors, and 87 were Seniors. The 15 question survey was posted online through Qualtrics, an online questionnaire tool, and the link to the survey was distributed through social media, email, as well as by word of mouth. Data was analyzed by a correlation test with Excel Data Analyst. A moderate positive linear correlation was determined between fast food consumption over the past six months and one month. Weak positive linear correlations were also determined for time constraints, accessibility, stress levels, and parental influences. A weak negative linear correlation was also determined for price.

Keywords: fast food, consumption, UH M/o(a,)noa, college students

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CHAPTER I

INTRODUCTION

College students are faced with time constraints everyday; classes five days a week, a job, a social life, and study time for midterms. Spare time for the average college student is rare. Along with gaining new educational insights, college students are forced to learn valuable time-management and financial budgeting skills. College can be stressful. Because the average student is struggling with the high cost of education, and always on the go, they make choices that are quick, easy, and affordable, but rarely healthy.

The fast food industry has grown immensely over the past 40 years. In 1970, the annual fast food industry revenue was \$6 billion (Fast Food, 2014). According to the same source, in 2014, the industry revenue was \$160 billion. McDonald's alone owned 1,000 fast food restaurants in 1968, and by the year 2000, they had over 28,000 worldwide (Schlosser, 2000). Obesity during the 1960s to 2010s also increased drastically from a rate of 13.4% to 35.8% (Flegal, Carroll, Kit, and Ogden 2012; Ogden and Carroll, 2010). While in some cases, increased food consumption in general has been linked with obesity, other sources claim that the frequent consumption of fast food specifically largely correlates to increased obesity rates (Han and Powell, 2013; Jeffrey and French, 1998). Individuals who consumed fast food regularly were found to have a 129% increased risk for developing obesity (Jaworowska, Blackham, Daview, and Stevenson, 2013). On average, American adults spend 46% of their total food expenditures on food-away-from-home, defined by Variyam as foods prepared outside of the home (Variyam, 2005). "Food-away-from-home" has also been defined, by Lin and

Guthrie, as table-service restaurants, fast food establishments, as well as take-out or delivery meals. American adults' consumption of foods prepared away from home increased from 17.7% in 1977 to 31.6% in 2008 (Lin and Guthrie, 2012).

Obesity has been associated with fast food consumption as well as several other health related issues (Jaworowska, Blackham, Davies, and Stevenson, 2013). For example, diseases such as type 2 diabetes, elevated cholesterol levels, high levels of low-density lipoprotein cholesterol (LDL-C), commonly known as "bad fats," and low levels of high-density lipoprotein cholesterol (HDL-C), or "good fats." Individuals who consumed fast food regularly were found to have a higher total calorie consumption rate, and consumed more fat overall (Rosenheck, 2008).

Despite implied correlations between fast food consumption and obesity, many fast food restaurants provide valuable benefits to young college students. First of all, fast food restaurants provide college students with part-time jobs. The McDonald's Corporation in particular, is responsible for providing 90% of the new jobs in the United States (Schlosser, 2000). Secondly, fast food restaurants are convenient for college students. Fast food companies such as McDonald's target students who are on tight budgets and need a meal that is filling, quick, and easily attainable, "students can easily place their orders, pay and be on their way" (Haury, 2012). And lastly, fast food is appealing to the senses (Stewart and Tinsley, 1995) as well as comforting to some, especially in times of stress (Kandiah, Yake, Jones, and Meyer, 2006).

Fast food, as an industry overall, is extremely convenient for the average college student, as well as other demographic groups that have tight schedules and budgets. The

nutritional value of fast food meals however, is questionable. For example, one McDonald's Big Mac contains 530 calories, more than one fourth of the recommended daily calorie intake, 27 grams of fat, 48% of the recommended daily value, and 960 milligrams of sodium, about half of the recommended daily value (McDonalds.com). The problem with fast food doesn't seem to be consumption in moderation, once a week for example. The main issue with fast food consumption is consuming that many calories, grams of fat, and milligrams of sodium multiple times a day, which could be potentially harmful.

The Problem

While fast food consumption has increased over the past century, so has obesity. Due to tight budgets and even tighter schedules, college students are susceptible to improper eating habits, which could lead to obesity. The problem with college students' lack of free time and financial resources is that fast and cheap foods are a more likely choice for a meal. Fast food is quick, easy, and often cheaper than food in traditional dine-in restaurants. With the number of fast food establishments on the rise, no matter where a student decides to go for a meal, especially near their university, fast food restaurants will more than likely be present. Current research has failed to explore fast food consumption patterns, and the motivations behind fast food consumption in college students. When not consumed in extreme moderation, fast food can have a negative impact on health and also cause other serious health problems such as type 2 diabetes and high LDL (bad) cholesterol.

The Purpose of This Study

This study attempts to gain a deeper understanding of what motivates college students to consume fast food, and what factors are not associated with fast food consumption. This study is intended to further the body of knowledge on fast food consumption patterns in college students; it is explicitly an exploratory research study. This study is provided primarily as a general basis for further, more in-depth research to be conducted on the issues at a later time.

The Significance of This Study

Various individual studies on motivations of food consumption in general have been conducted, however, there has yet to be a study specific to college students and fast food. There is a lack of knowledge of the college culture and food consumption choices. This study will reference knowledge from outside sources about particular motivating factors behind food consumption, and will exclusively focus on the college culture, providing a new subject for research. This study will serve as a basis to explore the claims made by various sources about food consumption choices in general, as well as provide room for further research of the fast food consumption choices of college students.

CHAPTER II

LITERATURE REVIEW

Time Constraints

- Perl (1980) explored the creation and revolution of the fast food chain when McDonald's opened their first restaurant in 1955. Perl noted the following, "What McDonalds offered was a cheap, fast, sanitary meal put together out of prefabricated parts in assembly-line fashion."
- Berry (1979) first coined the term "the time-buying consumer" to express a new market segment. The term implied that consumers, particularly wives, sought to save time in cooking and cleaning in order to have more time for hobbies, physical fitness, and television watching, or "me time" activities.
- Cutler, Glaeser, and Shapiro (2003) found that women in the 1960's spent over 2 hours cooking and cleaning. Cutler reported that in the 2000's, the time women spent preparing food and cleaning was nearly cut in half.
- Bertrand and Schanzenbach (2009) conducted a study about time usage and food consumption patterns and came up with the following relevant discoveries: during a regular work/school week (Monday-Friday) approximately 138 calories are consumed at work, 199 calories are consumed doing home activities, and 129 calories are consumed traveling throughout the day. Bertrand and Schansenbach concluded that because technology has made it easier to consume food anywhere at any time, secondary eating (eating doing activities other than focusing solely on eating or drinking) has become much more common-place.

- Mancino and Newman (2007) conducted a study and found a correlation between food preparation decisions and income, employment status, gender, and family composition. The study found that single working parents spent less time preparing food than working married parents.

Price

- An article from Brandweek suggested that, “when times are hard, cheap eats sell better” (O’Leary, 2010).
- "Fast Food Remains Recession Proof In US" (2009) reported that purchasing trends tend to shift during recessions. During recessions, people tend to be attracted to lower prices and more convenient products. The source claimed that those facing difficult economic situations tend to buy and consume more fast foods because the foods are generally more inexpensive than home-cooked or restaurant meals.
- "Financially Struggling College Students Turn To Food Banks" (2008) found that some college students around America are financially struggling so much so that they are relying on food stamps to provide them with food.
- "A Look at the Spending Habits of College Students," (n.d.) reported a study that found that the average college student only makes about \$757 per month, \$645 of which comes from employment, and \$152 comes from parent contributions or other sources. 19% of this monthly earning, or \$211, is used for the purchase of food.
- "Food Services" (n.d.) conducted a comparison of the price of food in ordinary sit down restaurants and food from fast food chains. Fast food restaurants have

sandwiches starting at a price of \$3.39 and meals starting at \$7.10. Prices were found to be generally higher at sit-down restaurants than at fast food chains.

- Cavanaugh (2003) reported that the average in-state tuition today averages from \$4,000 to \$8,000 per semester. Cavanaugh noted that 20% of students work 35 or more hours a week to pay for tuition.

Accessibility

- Mcphail, Chapman, and Beagan (2011) conducted a study of Canadian teenagers suggesting that geographical location of fast food restaurants was directly correlated with consumption of fast food. The study found that the teenagers that lived closer to fast food restaurants tended to consume more fast food than those teenagers located further away from fast food restaurants.
- Monge, Smith-Castro, Colon-Ramos, Aragon, and Herrera-Raven (2013) found that adolescents in Costa Rica that lived in rural areas were influenced by convenience and availability of the food restaurants to buy fast foods.
- Howard, Fitzpatrick, and Fulfroost (2011) surveyed students from 879 urban high schools in California. The study discovered a positive correlation between restaurants within a 10-mile radius of high schools and consumption of food from the conveniently located restaurants. This correlation was found in convenience stores and fast food restaurants in particular, although convenience stores presented a higher rate of consumption, consumption of fast food restaurants within a 10-mile radius of surveyed schools was significant.
- Davis and Carpenter (2009) found that students from schools located within a half a mile radius of one or more fast food restaurants, ate less fruits and vegetables

overall, consumed more soda, and were more likely to be overweight. The study concluded that convenience and exposure to fast foods had a negative impact on adolescent eating patterns and weight management.

- Sproba (2014) studied children's eating patterns and noted how accessible particular foods were to them on a daily basis. Sproba discovered that children were inspired to eat more fruits and vegetables when the foods were conveniently accessible to them.

Stress Levels

- Kandiah, Yake, Jones, and Meyer (2006) conducted a study of women at Midwestern State University and found that when under stressful conditions, women college students tended to eat more sweets and mixed dishes, fast foods included. The study found that when under stress, 81% of women college students surveyed experienced a change in appetite, 61% of which reported an increase in their appetite.
- Bauer, Hearst, Escoto, Berge, and Neumark-Sztainer (2012) surveyed full-time as well as part-time working mothers and fathers. Results of the survey revealed that full-time working mothers and fathers had higher levels of stress, consumed less fruits and vegetables overall, as well as consumed more fast foods than part-time working mothers and fathers.
- Born, Lemmens, Rutters, Nieuwenhuizen, Formisano, Goebel, and Westerterp-Plantenga (2009) conducted a study at Maastricht University that revealed that women in the absence of hunger tended to consume higher-caloric foods in times of stress.

- Liu, Xie, Chou, Koprowski, Zhou, Palmer, Sun, Guo, Duan, Sun, and Johnson (2007) found that the consumption of carbohydrates as well as other high calorie foods help some individuals cope with stress after conducting a study of individuals in China.
- Jastreboff, Sinha, Lacadie, Small, Sherwin, and Pontenza (2013) conducted a study of brain activity at Yale and found that obese individuals between the ages of 18 and 50 that were presented with stress, were more likely to have an increased consumption of fast foods, snacks, dessert foods, and high-calorie foods, all of which influence weight gain. The study also found that stress-eating was intensified in obese women, as opposed to obese men, dealing with stressful situations. Lean individuals were found to be less likely to consume foods in general, after being presented with stressful scenarios.

Parental Influences

- Schiffman and Wisenblit (2015) define attitudes as “learned predispositions” that can be formed by initial family values and experiences. Schiffman and Wisenblit note that family has a strong impact on one’s initial “shopping-related” attitudes. Schiffman and Wisenblit use the following example to demonstrate the phenomenon: if a person is rewarded with sweets as a child for good behavior, the person will often retain the (positive) taste for sweets throughout adulthood.
- Laroche, Kim, and Zhou (1996) link the familiarity of a brand to confidence in the brand, and brand confidence to purchase intention.

- Dursun, Kabadayi, Alan, and Sezen (2011) found a correlation between perceived quality and brand familiarity. The more familiar an individual is with a brand, the higher their perceived quality will be of the brand.
- Schiffman and Wisenblit (2015) explore how pre-adolescent children develop their skills and “consumer behavior norms” through observation of parent purchasing habits and decisions; this process is known as “consumer socialization.” Schiffman and Wisenblit note that parents play a critical role in the types of preferences and habits their children develop. These preferences can be for anything ranging from brands to types of foods.
- Wansink (2011) studied parental influences on family eating patterns and found that parents control 72% of what their family eats on a day-to-day basis.

CHAPTER III

HYPOTHESES

The development of the fast food industry, as well as the term, “the time buying consumer,” exemplified rapidly changing consumer preferences. Consumer preferences shifted from home-cooked meals to fast foods that cut food preparation time in half and left women with more time for “me time” activities. Technological advancements made fast food preparation easier and more time-efficient. Studies have shown that secondary eating, or eating on the go while doing other activities simultaneously, became more common (Bertrand and Schanzenbach, 2009). Studies have also shown that single working parents spend less time preparing food than working married parents (Mancino and Newman, 2007). Based on the literature review, the first hypothesis proposes that, as perceptions of time constraints increase, reported consumption of fast food will also increase.

H1a: There is no positive linear association between time constraints and frequency of fast food consumption.

H1b: There is a positive linear association between time constraints and frequency of fast food consumption.

When faced with financial challenges, individuals tend to gravitate toward lower priced, convenient products such as fast food; “when times are hard, cheap eats sell better.” When facing similar circumstances, some college students have reported using food stamps to provide daily food. Studies have found that college students only make about \$757 per month, \$645 of which comes from employment, and \$152 of which

comes from parents or other sources. Of the \$757 of income received every month, college students only use about \$211 for food purchases. Fast food restaurants provide lower priced meals than ordinary dine-in restaurants, allowing students to feed themselves for less. While in college, students also accrue expenses from \$4,000 to \$8,000 in college tuition per semester, in fact 20% of students work 35 hours or more just to pay for tuition. The second hypothesis proposes that the consumption of fast food will be negatively associated with the price of fast food. College students are predicted to consume foods based on the prices of the foods.

H2a: There is no negative linear association between price and frequency of fast food consumption.

H2b: There is a negative linear association between price and frequency of fast food consumption.

A study conducted in Canada found that teenagers that lived near fast food restaurants consumed more fast food than teenagers that did not live near fast food restaurants (Mcphail, Chapman, and Beagan, 2011). Another study conducted in Costa Rica reported a similar finding that teenagers that lived in rural areas were influenced to buy foods based on the convenience and availability of the foods (Monge, Smith-Castro, Colon-Ramos, Aragon, and Herrera-Raven, 2013). In California, another study found that there was a correlation between location of high school and food consumption patterns of students that attended the high school (Howard, Fitzpatrick, and Fulfrost, 2011). Students who attended a high school with one or more fast food restaurants located within a half of a mile of the campus were found to eat less fruits and vegetables, consume more sugary

soft drinks, and were more likely to be overweight. On the other hand, when fruits and vegetables were more convenient, children consumed more of these foods. Based on the literature review, the third hypothesis proposes that the convenience of fast foods will be positively correlated to the consumption of the foods in University of Hawai'i:

M/o(a,)noa college students.

H3a: There is no positive linear association between convenience and fast food consumption.

H3b: There is a positive linear association between convenience and fast food consumption.

The fourth hypothesis proposes that stress levels are directly correlated with consumption choices. Individuals, women in particular, that felt significant levels of stress, were reported to consume more fast foods and less vegetables and fruits (Bauer, Hearst, Escoto, Berge, and Neumark-Sztainer, 2012). Appetite as well as the consumption of carbohydrates and other high calorie foods, were also found to increase in individuals when presented with stress (Kandiah, Yake, Jones, and Meyer, 2006). These foods in some cases were actually found to help individuals cope with stress. A study conducted on brain activity also found that when obese individuals were presented with stressful situations, they were likely to consume foods such as fast foods, snacks, desserts, and high calorie foods (Jastreboff, Sinha, Lacadie, Small, Sherwin, and Pontenza, 2013). When presented with stress from school, work, and social situations college students are predicted to consume fast food more often.

H4a: There is no positive linear association between level of stress and frequency of fast food consumption.

H4b: There is a positive linear association between level of stress and frequency of fast food consumption.

The fifth hypothesis proposes a positive linear correlation between fast food consumption and parental influences, set by initial family values, brand preferences, brand confidence, purchasing habits, and/or perceived quality of a brand. Initial family values are formed at a young age and are often carried into adulthood. Brand preferences and confidence, purchasing habits, or perceived quality of a brand or product, were all found to be significant to an individual's development into and throughout adulthood. One study found that parental controls account for 72% of family food consumption patterns. It is predicted that individuals that were conditioned and fed fast food by their parents or guardians as children on a regular basis, will retain their initial family value and also consume fast food as an adult.

H5a: There is no positive linear association between parental influences and fast food consumption.

H5b: There is a positive linear association between parental influences and fast food consumption.

CHAPTER IV

METHODS

Sample

Participants were 189 University of Hawai'i: M/o(a,)noa students. These students ranged from Freshmen (42 students), to Sophomores (25 students), to Juniors (35 students), as well as Seniors (87 students). All students had to agree to a consent form (see Appendix I) before completing the survey. Most respondents didn't receive any form of compensation for completing the survey, however some students did receive credit for Shidler's Marketing Research class (MKT 321) with Professor Dana Alden. The sample included 51 males and 137 females from ages 17 to 42. Most participants were between the ages of 18 and 22, lived on campus, and were employed. Only 38% of student respondents did not have a job, or worked 5 hours or less a week (refer to Table 1). This study was approved by the University of Hawai'i: M/o(a,)noa Human Subjects Committee as an exempt study (November 20, 2014).

Table 1		
Demographic characteristics of UHM students taking the 15 question Fast Food Consumption survey. (n=189)		
	n	%
Age (y)		
17-23	165	87
24-43	22	12
n/a	2	1
Gender		
Male	51	27
Female	137	72
Other	1	1
Class Standing		
Freshman	42	22
Sophomore	25	13
Junior	35	19
Senior	87	46
Graduate Student	0	0
Dwelling		
On-campus	64	34
Off-campus	122	66
Job/Internship (hours/week)		
0-5 h/w	72	38
5-15 h/w	36	19
15-25 h/w	46	24
25 or more h/w	35	19
Note that percentages were rounded to make total percentages for each characteristic equal to 100%.		

Table 1

Procedure and Measurement

Descriptive exploratory research was used to study and discover the motivations behind fast food consumption in University of Hawai'i: M/o(a, ʻ)noa college students. A survey was developed through Qualtrics, a free online survey creation website. The survey contained 15 questions in total (see Appendix II), with an introduction of the research study as well as an open-ended section for participants to comment about the study or about the survey. Of the 15 questions, 5 were demographic questions, and 10 questions directly pertained to the study; two of which identified fast food restaurants as the following establishments: Papa John's, McDonald's, Kentucky Fried Chicken, Taco Bell, Burger King, Jack in the Box, Wendy's, Dairy Queen, and Popeye's (see Appendix

II). Once the survey was created and the necessary training was completed, the study was approved by the University of Hawai'i Human Subjects Committee and received IRB approval. A focus group of four University of Hawai'i M/o(a,)noa students was also conducted to review the survey. This process was intended to ensure that the survey was worded clearly and that the questions were effective at measuring the hypotheses.

Next, a survey of 189 University of Hawai'i M/o(a,)noa students was conducted. The survey was distributed through emails to students, as well as through the University of Hawai'i M/o(a,)noa Honors Program email newsletter. Professor Dana Alden also agreed to notify his class of the survey and offered a small token of extra credit to those who completed the survey. Next, an association test using Microsoft Excel Data Analyst, was conducted with the collected data.

CHAPTER V

RESULTS

The purpose of this study was to explore factors that may be correlated with the frequency of fast food consumption in college students. I tested the following five hypotheses:

1. As perceptions of time constraints increase, reported consumption of fast food will increase.
2. As price of fast food decreases, consumption of the fast food will increase.
3. As convenience of a fast food increases, consumption of the fast food will also increase.
4. As reported stress levels increase, consumption of fast food will increase.
5. As frequency of reported fast food consumption as a child increases, frequency of fast food as an adult will also increase.

Consumption

An association test revealed that there was a positive moderately strong correlation between consumption of fast food over the past six months, and one month ($p < .01$, Table 2). Those who consumed fast food in the past six months likely consumed fast food in the past month as well.

Correlation Analysis: Fast Food Consumption Over the Past 6 Months and 1 Month			
Correlation	t	df	Significance/Strength
0.68	12.6	187	p<.01, Moderate

Table 2

Time

Two questions were used to test the correlation between time constraints and fast food consumption. The first question (Table 3.1) “In general, how would you label the amount of time you have to complete all desired tasks during the week?” was tested with both consumption of fast food over six months and one month. The test showed that the results were insignificant over the time period of 6 months (p=.65), and weak over the one month period (p=.05). The second question, “About how many hours a week do you work either a paid job, paid/unpaid internship, or both?” (Table 3.2), was found to have the same results as the first, six months showed insignificant results (p=.59) and one month was found to have a weak correlation (p=.05).

Correlation Analysis: Time				
“In general, how would you label the amount of time you have to complete all desired tasks during the week?”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	-0.03	0.5	187	p=.65, None
1 Month	-0.14	1.9	187	p=.05, Weak

Table 3.1

Correlation Analysis: Time				
“About how many hours a week do you work either a paid job, paid/unpaid internship, or both?”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	0.04	0.5	187	p=.59, None
1 Month	0.14	1.9	187	p=.05, Weak

Table 3.2

Price

The relationship between price and fast food consumption was tested using two questions, one: “In terms of types of foods you buy, how important is price to your purchase decision?”, and two: “In general, what types of foods do you usually buy, as far as price goes?” Two different results for this analysis were obtained. Correlating the first question with the frequency of fast food purchases over the past six months and one month (Table 4.1) produced insignificant results ($p=.40$, $p=.16$ respectively). However, the second question produced weak negative linear correlations with the frequency of fast food purchase over the past six months ($p<.01$) and one month ($p=.05$).

Correlation Analysis: Price				
“In terms of the types of foods you buy, how important is price to your purchase decision?”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	0.06	0.8	187	p=.40, None
1 Month	0.10	1.4	187	p=.16, None

Table 4.1

Correlation Analysis: Price				
“In general, what types of foods do you usually buy as far as price goes?”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	-0.23	3.2	187	p<.01, Weak
1 Month	-0.14	2.0	187	p=.05, Weak

Table 4.2

Accessibility

The relationship between convenience and frequency of fast food consumption was determined by testing consumption of fast food over the past six months and one month with the following question: “In terms of location, how important is accessibility to your decision about which restaurants to purchase food from?” The results of this analysis demonstrated a weak positive correlation between convenience and fast food consumption over the past six months (p=.05). Over one month (p=.07), no linear correlation was found.

Correlation Analysis: Accessibility				
“In terms of location, how important is accessibility to your decision about which restaurants to purchase food from?”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	0.14	2.0	187	p=.05, Weak
1 Month	0.13	1.8	187	p=.07, None

Table 5

Stress

University of Hawai'i: M/o(a,)noa student respondents were asked to answer how stressed they felt in the following areas: work, studies, and social. The respondents were given five options ranging from not pressured at all (1), to very pressured (5). Each category (work, studies, and social) was tested with frequency of fast food consumption within the past six months and one month. The correlation analysis showed a weak positive linear correlation between work and fast food consumption over the past one month (p=.05). No other significant positive linear correlations were found amongst the stress variables and fast food consumption over the past six months and one month.

Correlation Analysis: Work Stress				
“Select how pressured you are in the following area: work.”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	0.03	0.4	187	p=.65, None
1 Month	0.14	2.0	187	p=.05, Weak

Table 6.1

Correlation Analysis: School Studies Stress				
“Select how pressured you are in the following area: studies.”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	-0.06	0.8	187	p=.45, None
1 Month	0.09	1.2	187	p=.22, None

Table 6.2

Correlation Analysis: Social Stress				
“Select how pressured you are in the following area: social.”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	0.10	1.4	187	p=.16, None
1 Month	0.01	0.1	187	p=.94, None

Table 6.3

Parental Influence

To test the correlation between parental influences and frequency of fast food consumption, fast food consumption over the past six months and one month was tested with frequency of fast food consumption as a child (Table 7). The question, “Identify how often your parents/guardians took you to any of the following fast food restaurants when you were a child” was used to test frequency of fast food consumption as a child. It was found that both consumption over six months and one month had weak positive linear correlations with fast food consumption as a child ($p < .01$, $p < .01$ respectively).

Correlation Analysis: Parental Influence				
“Identify how often your parents/guardians took you to any of the following fast food restaurants when you were a child.”				
Fast Food Consumption:	Correlation	t	df	Significance/Strength
6 Months	0.32	4.7	187	$p < .01$, Weak
1 Month	0.23	3.3	187	$p < .01$, Weak

Table 7

CHAPTER VI

DISCUSSION

The overall influence of fast food consumption on health, and its importance have been highlighted in various studies (Han, 2013; Jeffrey, 1998). One source claimed that those who consumed fast food on a regular basis had an increased risk of becoming obese (Jaworowska, 2013). It is crucial to understand the negative health effects of fast food consumption and the patterns of fast food consumption. Some sources claim that food consumption is correlated with how conveniently accessible a food or restaurant is to an individual (Howard, 2011; Davis, 2009). Others claim that fast food consumption is correlated with stress levels (Kandia, 2012; Bauer, 2006).

This study discovered, a moderate positive linear correlation between fast food consumption over the past six months and the past month. Weak positive linear correlations were found for time constraints over the past month, accessibility over the past six months, work related stress over the past month, and parental influences over the past six months and one month. A weak negative linear correlation between price and fast food consumption over the past six months and one month was also found. No other linear correlations were significant.

Implications and Future Research

It is crucial that further research be completed regarding fast food consumption patterns in college students, and in general. The analyses revealed weak to moderate linear correlations that were directionally significant, as it was hypothesized. This suggests that issues should be explored and tested further. An in-depth analysis of the

data, as well as a more specific survey of a random sample should be completed. Stronger methods and research tools are needed to explore the relationships between time, price, accessibility, work related stress, parental influences, and fast food consumption patterns.

It is necessary to further study food consumption, particularly in the context of parental influences. It could be implied that food consumption is habitual, and may be learned from a young age based on the moderate correlation discovered between fast food consumption over the past six months and one month, and the weak correlation found between parental influences and fast food consumption. Based on the behavioral model, which explains that behaviors can be learned and individuals may be conditioned to act in a particular way, this study may imply that fast food consumption is habitual. The model may also verify that in this study, fast food consumption can be learned, as well as unlearned, and may explain why individuals that were conditioned at a young age to consume fast food, still consume fast food. Also, purchase and consumption behaviors are determined by initial family values and purchasing decisions (Schiffman and Wisenblit, 2015). This could imply that since parents account largely for their children's consumption patterns and purchase behaviors, children maintain these preferences all throughout their lives. Based on these implications, I suggest preventative measures be taken by parents and companies that particularly target children, rather than college students.

Because childhood is a time when habits and preferences are developed, it is important for parents to encourage healthy eating habits. It is also important for companies that particularly target children to participate in healthy food campaigns. Healthy eating/health food campaigns should be aired to children directly through

mediums such as child television shows, traditional radio as well as streaming radio, social media (although this medium would be more effective for pre-teens and teens), and print advertisements, or picture books. Disney (MOHL Brochure, n.d.) and Sesame Street (Healthy Habits, n.d.) for example have both started airing television shows and commercials to depict the importance of developing healthy habits.

Disney in particular has enacted a *Magic of Healthy Living* campaign. They have adopted healthier menu items, such as fruits and vegetables, at their amusement parks and have begun displaying nutrition facts on their food items. Disney reported that 78% of children who viewed the *Magic of Healthy Living* campaign had increased their fruit and vegetable consumption, and 80% of children who viewed the campaign reported doing more physical activity. Since 2006, Disney has sold over 2 billion servings of fruits and vegetables. Disney's campaign and efforts are evidently successful amongst children, it would be ideal for more companies to provide healthier options for children, and to air influential ads that encourage healthy eating habits as done by Disney.

Limitations

There are several limitations to this study. First, because I am enrolled in classes at Shidler College of Business and distributed my survey through my Mentor's marketing class and mostly by word of mouth to students in my classes, my sample may not be representative of all students at the University of Hawai'i: M/o(a,)noa. The sample was a convenience sample, limited to mostly students at Shidler College of Business. The second limitation evident to this study, was that after distributing the survey and analyzing results, some questions and response choices were found to be flawed in some

ways and were not entirely neutral. Also, some response categories overlapped to some extent. I believe that some to of the survey errors may have affected the accuracy of the responses, but none should have affected results drastically.

Conclusion

This thesis has explored various correlations between fast food consumption and time constraints, price, accessibility, stress, and parental influences. This thesis has also explored consumption patterns over six months and one month increments. Several linear correlation tests revealed a moderate positive linear correlation between reported fast food consumption over the past six months and one month. Weak positive linear correlations were found for time constraints over one month, accessibility over six months, work related stress over one month, and parental influences over both six months and one month. A weak negative correlation was also determined for price and fast food consumption over the past six months and one month. It is evident however, that more research must be done on the issues. A survey with more specific questions and proper response categories should be distributed to explore the motivations behind fast food consumption further, and stronger methods should be used to analyze the correlations.

APPENDIX I

CONSENT FORM

My name is Lana Hudson. I am a undergraduate student at the University of Hawaii at Manoa in the discipline of Marketing. As a part of the requirements for my Honor's Senior Thesis, I am conducting this survey to further the overall body of knowledge. The purpose of this survey is to describe and identify particular motivations behind fast food consumption in University of Hawaii: Manoa students. I am asking you to participate because you are a University of Hawaii at Manoa student.

Time Commitment: This survey will take approximately 7-10 minutes. There are a total of 15 questions, 5 of which are demographic. All questions are multiple choice except for "what is your age?"

Benefits and Risks: There will be no direct benefit to you for participating in this interview. I believe there is very little risk to you in participating in this survey. If you become uncomfortable answering any of the question you may take a break and come back to the survey at a later time, or exit the survey completely.

Privacy and Confidentiality: All of the information collected will be held strictly confidential. None of the answers or information will be able to be traced back to you in any way. I do not ask for your name or any personally identifiable information on this survey.

Voluntary Participation: Your participation in this survey is completely voluntary. You may stop the survey at anytime without penalty or loss or any kind.

Questions: If you have any questions about this survey or the study in general please call me at (808)-294-1702 or email me at lanah7@hawaii.edu. If you have any questions about your rights as a research participant, you may contact the UH Human Studies Program at (808)-956-5007 or uhirb@hawaii.edu.

If you agree to the terms above and would like to participate in this study please check yes below.

- Yes
- No

APPENDIX II

SURVEY

Are you a University of Hawaii at Manoa student?

- Yes
- No

Over the past 6 months, how frequently have you visited any of the following fast food restaurants?

McDonald's
Burger King
Taco Bell
Jack in the Box
Wendy's
Dairy Queen
Popeye's
KFC
Papa John's
Pizza Hut

- Never
- Rarely
- Occasionally
- Frequently
- Quite Frequently
- Very Frequently

In the past month, how often have you consumed food from one or more of the following fast food restaurants?

McDonald's
Burger King
Taco Bell
Jack in the Box
Wendy's
Dairy Queen
Popeye's
KFC
Papa John's
Pizza Hut

- Never
- Once
- Twice
- 3 Times
- 4 Times
- 5 Times
- More Than 5 Times

In general, how would you label the amount of time you have to complete all desired tasks during the week?

- Very Little Little The Right Amount More Than Enough Way More Than Enough
-

In terms of types of foods you buy, how important is price to your purchase decision?

- Unimportant
 Slightly Important
 Important
 Quite Important
 Very Important

In general, what types of foods do you usually buy, as far as price goes?

- Low Priced
 Somewhat Low Priced
 Moderately Priced
 Somewhat High Priced
 High Priced

About how many hours a week do you work either a paid job, paid/unpaid internship, or both?

- 0
 1-5
 5-10
 10-15
 15-20
 20-25
 25-30
 More Than 30

In terms of location, how important is accessibility to your decision about which restaurants to purchase food from?

- Unimportant
 Slightly Important
 Important
 Quite Important
 Very Important

Select how pressured you are in the following areas.

	Not Pressured At All	Somewhat Pressured	Moderately Pressured	Pressured	Very Pressured
Work	<input type="radio"/>				
Studies	<input type="radio"/>				
Social	<input type="radio"/>				

Identify how often your parents/guardians took you to any of the following fast food restaurants when you were a child.

- Never Less than Once a Month Once a Month 2-3 Times a Month Once a Week 2-3 Times a Week Daily
-

What is your age?

What is your gender?

- Male
 Female
 Other

Do you live on campus or off campus?

- On Campus
 Off Campus

Do you own your own car?

- Yes
 No

What is your class standing?

- College Freshman
 College Sophomore
 College Junior
 College Senior
 Graduate Student

REFERENCES

- "A Look at the Spending Habits of College Students." - *StateUniversity.com Blog*. U.S. University Directory, n.d. Web. 28 Oct. 2014.
- Bauer, Katherine W., Mary O. Hearst, Kamisha Escoto, Jerica M. Berge, and Dianne Neumark-Sztainer. "Parental Employment and Work-family Stress: Associations with Family Food Environments." *Social Science & Medicine* 75.3 (2012): 496-504. Web. 23 Oct. 2014.
- Berry, Leonard L. "The Time-Buying Consumer." *Journal of Retailing* 55.4 (1979): 58-69. Print.
- Bertrand, Marianne, and Diane Whitmore Schanzenbach. "Time Use and Food Consumption." *American Economic Review* 99.2 (2009): 170-76. Web. 25 Feb. 2015.
- Born, J. M., S. G T Lemmens, F. Rutters, A. G. Nieuwenhuizen, E. Formisano, R. Goebel, and M. S. Westerterp-Plantenga. "Acute Stress and Food-related Reward Activation in the Brain during Food Choice during Eating in the Absence of Hunger." *International Journal of Obesity* 34.1 (2009): 172-81. Web. 26 Nov. 2014.
- Cavanagh, Sean. "Rising College Costs Spark Responses." *Education Week*. N.p., 22 Oct. 2003. Web. 29 Oct. 2014.
- Cutler, David M., Edward L. Glaeser, and Jesse M. Shapiro. "Why Have Americans Become More Obese?" *Journal of Economic Perspectives* 17.3 (2003): 93-118. Web. 20 Oct. 2014.
- Davis, Brennan, and Christopher Carpenter. "Proximity of Fast-Food Restaurants to Schools and Adolescent Obesity." *American Journal of Public Health* 99.3 (2009): 505-10. Web. 26 Nov. 2014.
- Dictionary.com*. Dictionary.com, n.d. Web. 20 Oct. 2014.
- Dursun, Inci, Ebru Tümer Kabadayı, Alev Koçan Alan, and Bülent Sezen. "Store Brand Purchase Intention: Effects of Risk, Quality, Familiarity and Store Brand Shelf Space." *Procedia - Social and Behavioral Sciences* 24 (2011): 1190-200. Web. 13 Nov. 2014.
- "Fast Food Industry Analysis 2014 - Cost & Trends." *Fast Food Industry Analysis 2014 - Cost & Trends*. Franchise HELP, n.d. Web. 06 Oct. 2014.
- "Fast Food Remains Recession Proof In US." *M2presswire* (2009): *Newspaper Source Plus*. Web. 21 Oct. 2014.
- "Financially Struggling College Students Turn To Food Banks." *Diverse: Issues In Higher Education* 25.14 (2008): 15. *Academic Search Premier*. Web. 21 Oct. 2014.
- Flegal, Katherine M., Margaret D. Carroll, Brian K. Kit, and Cynthia L. Ogden. "Prevalence of Obesity and Trends in the Distribution of Body Mass Index Among US Adults, 1999-2010." *JAMA*. N.p., 1 Feb. 2012. Web. 10 Oct. 2014.

"Food Services." *Price Comparisons with Local Restaurants*. N.p., n.d. Web. 29 Oct. 2014.

Han, Euna, and Lisa M. Powell. "Fast Food Prices And Adult Body Weight Outcomes: Evidence Based On Longitudinal Quantile Regression Models." *Contemporary Economic Policy* 31.3 (2013): 528-36. Web. 15 Oct. 2014.

Haury, Amanda C. "Industries That Benefit From Broke College Students." *Investopedia*. Investopedia.com, 26 Apr. 2012. Web. 09 Oct. 2014.

Healthy habits. (n.d.). Sesame Workshop. Retrieved March 9, 2014, from <http://www.sesameworkshop.org/what-we-do/our-initiatives/healthy-habits-for-life/>

Howard, Philip H., Margaret Fitzpatrick, and Brian Fulfrost. "Proximity of Food Retailers to Schools and Rates of Overweight Ninth Grade Students: An Ecological Study in California." *BMC Public Health* 11.1 (2011): 68. Web. 26 Nov. 2014.

Jastreboff, A. M., R. Sinha, C. Lacadie, D. M. Small, R. S. Sherwin, and M. N. Potenza. "Neural Correlates of Stress- and Food Cue-Induced Food Craving in Obesity: Association with Insulin Levels." *Diabetes Care* 36.2 (2013): 394-402. Web. 26 Nov. 2014.

Jaworowska, Agnieszka, Toni Blackham, Ian G. Davies, and Leonard Stevenson. "Nutritional Challenges and Health Implications of Takeaway and Fast Food." *Nutrition Reviews* 71.5 (2013): 310-18. Web. 1 Dec. 2014.

Jeffery, R. W., and S. A. French. "Epidemic Obesity in the United States: Are Fast Foods and Television Viewing Contributing?" *American Journal of Public Health* 88.2 (1998): 277-80. Web. 30 Sept. 2014.

Kandiah, Jayanthi, Melissa Yake, James Jones, and Michaela Meyer. "Stress Influences Appetite and Comfort Food Preferences in College Women." *Nutrition Research* 26.3 (2006): 118-23. Web. 15 Oct. 2014.

Laroche, Michel, Chankon Kim, and Lianxi Zhou. "Brand Familiarity and Confidence as Determinants of Purchase Intention: An Empirical Test in a Multiple Brand Context." *Journal of Business Research* 37.2 (1996): 115-20. Web. 13 Nov. 2014.

Lin, Biing-Hwan, and Joanne Guthrie. *Nutritional Quality of Food Prepared at Home and Away from Home, 1977-2008*. N.p.: n.p., n.d. Economic Research Service, Dec. 2012. Web. 15 Oct. 2014.

Liu, Chunhong, Bin Xie, Chih-Ping Chou, Carol Koprowski, Dunjin Zhou, Paula Palmer, Ping Sun, Qian Guo, Lei Duan, Xiufa Sun, and C. Anderson Johnson. "Perceived Stress, Depression and Food Consumption Frequency in the College Students of China Seven Cities." *Physiology & Behavior* 92.4 (2007): 748-54. Web. 27 Nov. 2014.

Mancino, Lisa, and Constance Newman. *Who Has Time to Cook? How Family Resources Influence Food Preparation*. Rep. no. 40. N.p.: USDA Economic Research Service, 2007. Print.

Mcphail, Deborah, Gwen E. Chapman, and Brenda L. Beagan. "'Too Much of That Stuff Can't Be Good': Canadian Teens, Morality, and Fast Food Consumption." *Social Science & Medicine* 73.2 (2011): 301-07. Web. 21 Oct. 2014.

MOHL Brochure. (n.d.). A Company Wide Commitment. Retrieved March 17, 2014, from http://thewaltdisneycompany.com/sites/default/files/MOHL_Brochure.pdf

Monge-Rojas, Rafael, Vanessa Smith-Castro, Uriyoán Colón-Ramos, M. Catalina Aragón, and Francisco Herrera-Raven. "Psychosocial Factors Influencing the Frequency of Fast-food Consumption among Urban and Rural Costa Rican Adolescents." *Nutrition* 29.7-8 (2013): 1007-012. Web. 23 Oct. 2014.

Ogden, Cynthia L., and Margaret D. Carroll. "Prevalence of Overweight, Obesity, and Extreme Obesity in Adults: United States Trends 1960-1962 Through 2007-2008." *CDC.gov* (2010): n. pag. *CDC.gov*. Web. 12 Oct. 2014.

O'Leary, Noreen. "McDonald's Does It-- One Dollar At A Time." *Brandweek* 51.23 (2010): 17-18. Web. 20 Oct. 2014.

Overview of Fast Food Market. Rep. Fast Food Facts 2013, n.d. Web. 8 Oct. 2014.

Perl, Lila. *Junk Food, Fast Food, Health Food: What America Eats and Why*. New York: Houghton Mifflin/Clarion, 1980. Print.

Rosenheck, R. "Fast Food Consumption and Increased Caloric Intake: A Systematic Review of a Trajectory towards Weight Gain and Obesity Risk." *Obesity Reviews* 9.6 (2008): 535-47. Web. 11 Nov. 2014.

Schiffman, Leon G., Joseph Wisenblit. *Consumer Behavior*. 11th ed. New Jersey: Pearson Education, 2015. Print.

Schlosser, Eric. "Fast Food Nation: The Dark Side of the All-American Meal." *The New York Times on the Web*. N.p., 2000. Web. 9 Oct. 2014.

Sproba, Christie. "Kids Will Eat Healthy Food If It's There for Them." *Www.yourconroenews.com*. N.p., 7 Sept. 2014. Web. 23 Oct. 2014.

Stewart, Beth, and Ann Tinsley. "Importance of Food Choice Influences for Working Young Adults." *Journal of the American Dietetic Association* 95.2 (1995): 227-30. Web. 15 Oct. 2014.

Variyam, Jayachandran N. *Nutrition Labeling in the Food-away-from-home Sector: An Economic Assessment*. Washington, D.C.: USDA Economic Research Service, 2005. *United States Department of Agriculture*. Economic Research Service, Apr. 2005. Web. 15 Oct. 2014.

Wansink, Brian. "Empowering Nutrition Gatekeepers: The Parents." *Journal of Nutrition Education and Behavior* 43.5 (2011): 307. Print.