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The Impact of Fast Food Marketing on Millennials

A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science in Human Environmental Sciences

By

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ABSTRACT

Fast food marketing is an effective tool used by businesses to build food brand recognition among their consumers. Increased fast food consumption has been linked to the increase in high calorie consumption. This study sought among Millennials to assess the association between fast food marketing and consumption of fast food. It further dealt with perceptions on the relationship between fast food consumption and weight gain. A convenience sample of 507 participants was used to collect data from University of Arkansas' students through an online survey and an in person survey. An independent sample t test and multivariate analysis of variance (MANOVA) were used to analyze the data. The findings indicated that knowledge levels affected consumption decisions. Low nutritional knowledge level consumers would be more likely influenced by fast food advertisement to purchase fast food as opposed to consumers with adequate nutritional knowledge level. In addition, the findings revealed that mere nutritional knowledge does not necessarily lead to low prevalence of obesity. However, there was a relationship between the level of consumption of fast foods and obesity. The results of this study provided policy implications on how to help strengthen nutrition education resources and ultimately have an impact on Millennials dietary behavior.

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DEDICATION

This edition of *The Impact of Fast Food Marketing on Millennial Generation* is dedicated to my late parents Sediko and Motlatsi Segokgo. Thank you for being the best parents. I hope this accomplishment makes you proud.

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CHAPTER 1

Introduction

The fast food industry has grown at an alarming rate in the US. Fast food is considered a convenience food of low cost that is purchased in outlets that allow for carry-out eating venues without wait service (Pereira, et.al. 2005; Rosenheck, 2008; Hacker, 2011). The growth in fast food industry is expected to continue and reach USD$246.6 billion in sales by the year 2019 (Euro Monitor International, 2015). Also, US food consumption trend data shows a consumption shift has occurred over the past few decades. In 1970, 25.9% of all food spending was for food away from home; by 2012, the figure rose to its highest level of 43.1%--an indication that more families were willing to indulge themselves by eating away from home (Hwan-Lin, 2014; Story & French, 2004). Past studies indicated the consumption of foods high in fats and carbohydrates at greater than recommended levels as well as the consumption of nutrient-dense foods and beverages (Hwan-Lin, 2014; Wells & Buzby, 2008). Furthermore, owing to time constraints, lifestyle, and convenience, fast food has infiltrated the American society to become a social custom (Schlosser, 2012; Paeratakul, Ferdinand, Champagne, Ryan, & Bray, 2003).

According to the US Census Bureau (2015), American Millennials with 83.1 million people represent more than one-quarter of the nation's population. Millennials, are born between the years 1982 till 2000. In comparison to preceding generations, Millennials show a great deal of variety, as they are well educated, knowledgeable, career orientated and confident (Nowak, Thach, & Olsen, 2006; Howe & Strauss, 2007). In addition, Millennials are considered to be the largest consumer group in the US with annual consumer spending currently totaling $200 billion (Harris Interactive, 2001). Millennials, who are now young adults, are among the group noted to eat away from home, relying heavily on fast food for their nourishment (Story, Neumark-Sztainer, & French, 2002; Paeratakul et al., 2003). Furthermore, studies indicate that young adult

spending on fast food far outweighs spending on aspects such as higher education and electronics (Harris, Stiles & Durocher, 2011). According to French, Harnack, & Jeffery (2000), an increase in body weight is associated with frequent consumption of fast food with high fat and calorie levels. Since Millennials have shown to have vast spending power (Solomon, 2014), and with their predilection for convenience foods it may be assumed that they may be consuming larger quantities of fast food, which may lead to obesity. With varying reasons such as age, ethnicity, and economic status contributing to fast food consumption, there is little evidence that suggests that there will be a decrease in fast-food consumption in the US (Frederick, Snellman, & Putnam, 2014; Kearney, 2010; Paeratakul et al., 2003). Therefore, customer inclination towards fast foods has resulted in an increase in fast food products in the market (Elitzak, 2015; Hwan-Lin, 2014).

Millennials tend to make quick purchasing decisions; they shop first for convenience and then for performance (Gronbach, 2000). Therefore, Millennials' desire for convenience coupled with their spending power might correlate to increased fast food consumption. This, in turn, might correlate to an increase in body weight leading to an increased prevalence of obesity, which is considered a public health problem (Ogden, Carroll, Kit, & Flegal, 2014; Bassett & Perl, 2004). Overweight and obesity are defined by the WHO (World Health Organization) as abnormal or excessive fat accumulation that presents a risk to an individual's health. Body mass index (BMI) is a common measure of obesity, which for adults is calculated using weight in kilograms or pounds divided by height in meters squared or inches squared (Fryar, Carroll, & Ogden, 2014). Thus, obesity is described as a condition characterized by a body mass index greater than or equal to 30 kg/m^2 (Fryar, et al, 2014). Records from Sharpe, (2013) and Fryar, et al. (2014) indicate that obesity is on the rise in the US. These increases in the incidence spanned almost all demographic groups.

Despite using both educational (e.g. nutrition education in curriculum, community campaigns) and non-educational (e.g. physical activity) measures to inform and educate consumers in the US on healthy eating practices, the rate of weight gain leading to obesity is still high. The high rate of obesity could be attributed to the use of aggressive advertisement means used by marketers that communicate food consumption cues to ensure that consumers recognize and use their brands (Folta, Goldberg, Economos, Bell, & Meltzer, 2006). Bearing this in mind, it becomes important to investigate whether food advertising may cause an increased risk of obesity.

Marketing entails actions taken by establishments to communicate, deliver, promote, and sell ideas or goods to customers, clients and the society (American Marketing Association [AMA], 2013). In recent years, fast food marketers have shifted their marketing focus to Millennials who are becoming adults with spending power and purchasing influence (Nowak, et al., 2006). Likewise, marketing trends have seen changes throughout the years that incorporated newer and more advanced methods of sales and information dissemination regarding available fast food products. What was once a process of generating product awareness, has evolved to include sales promotions to prospective consumers. Multiple channels aimed at building brands and ultimately influencing fast food product purchasing behavior are used to reach the Millennials. Millennials have been known to form an association with products if they are well informed about them (Harris, et al., 2011). On the other hand, Wai-Ling (2004) in his study on perceptions of teachers, found that though consumers may be health conscious, they may not make healthy decisions when selecting food. This may imply that Millennials do not use their knowledge of fast food to influence their purchasing decisions. Consumer knowledge is integral as it influences understanding of information and ultimately impacts consumption behavior.

Brucks (1985) classified knowledge into two distinct types; objective knowledge and subjective knowledge. Objective knowledge involves having factual information that relates to a given subject; whereas, subjective knowledge leans more toward what an individual professes to know relating to an object.

Therefore, this study intends to examine the role of fast food marketing in relation to Millennials' consumer buying habits. An examination of the impact of fast food marketing on Millennials' consumption of fast food, as well as an exploration of Millennials' perception of the relationship between fast food and weight gain will be assessed. The theory of planned behavior will be used as the theoretical framework, and both subjective and objective knowledge will be assessed. The study will examine both the Millennials' attitudes and willingness to purchase fast food products, and how fast food purchasing affects Millennials' consumer weight. Demographic attributes will be assessed along with BMI examinations.

CHAPTER II

Literature Review

Millennial Consumer Characteristics

The Millennials are the generation who are currently transitioning from adolescence into family life. Millennial Generation (also referred to as Generation Y and Echo Boomers) are those born between 1982 and 2000. This group includes over 83 million members; thus, making up over one-quarter of the US population (US Census Bureau, 2015; Moore 2007; Nowak, et al., 2006). With an approximate spending on consumption spanning at $200 billion, Millennials are an important part to the US economy (Harris Interactive, 2001).

The Millennials differ from generations before them (e.g. Generation X) as they are varied and unique consumers whose traits show that they are educated, informed, technologically knowledgeable who spend sensibly in a confident and fun manner as teams (Ogbeide, Fenich, Scott-Halsell, & Kesterson, 2013; Tapscott, 2008; Nowak, et al., 2006; Neuborne, 1999). Millennials are known to desire connection and share experiences making them highly sociable, more so than preceding generations. They place high value on lifestyle balance and enjoy shopping. They are known to like instant gratification, humor, irony, frankness, and believe in things being done in a timely manner (Barton, Fromm & Egan, 2012; Williams & Page 2011; Olsen, Thach, & Nowak, 2007).

Millennials are known to engage in purchase activities and are influential in their family's spending and peers' decisions (Neuborne, 1999). Notably, a majority of Millennials who are now young adults still depend on their parents as they grew up having access to their parents' funds (Dannar, 2013; Neuborne, 1999). Also, they are not as materialistic as the previous group of Generation X. Very few will have commitments in terms of tangible property and, as such, they have less financial commitments such as mortgages. Thus, it allows them to

have a greater portion of disposable income to use for entertainment and outings (Williams & Page, 2011). A previous study (Solomon, 2014) showed a link between Millennial socializing, entertainment and consumption patterns, it may follow that their interest in having fun, and their notably high spending ability builds on the notion that Millennials live for the moment and believe in enjoying themselves.

Also, it shows that food plays an important part in the Millennial consumer's social interaction and that they may spend their money on outings that include dining as compared to other experiences. This is ascertained by Harris, Stiles, and Durocher (2011), who pointed out that Millennials spend a lot of their money on fast-food as opposed to other commodities. They like eating away from home and trying different types of food, relying a lot on fast food (George, 2011; Story et al., 2002; Paeratakul et al., 2003). In terms of fast food consumption in the US, the Millennials have been identified as having poor health habits based on inactivity and poor nutrition (Barkin, Heerman, Warren, & Rennhoff, 2010; National Center for Health Statistics, 2008). Their eating habits might suggest a dependence on fast foods that have a high content in saturated fats, which may lead to cases of obesity.

Fernandez-Cruz (2003) and Nowak et al. (2006) portray Millennials as technology and market savvy consumers. The Millennials grew up with computers at home and are able to multi-task in different technological areas (Oblinger, 2004).In a world where the internet can be incorporated effortlessly into the Millennials' daily lives, it can integrate their consumer experiences (Tapscott, 2008). They seek multiple sources of information and are likely to consult their friends before making purchases to tap into their collective intelligence. They are known to favor products that would have media pages where they can interact with their purchase even

before product acquisition; and use it to validate their decisions, some of which includes dining (Barton, et al., 2012).

US Millennials' lives are enriched through social media; therefore, it stands to reason that their food experiences may also be influenced by their social and technological interactions. The use of fast foods for Millennials is greater than the prescribed daily amount of nutrients. This may be linked to some of their ideals of collaboration, diversity, and fun as Millennials report that food is a good social activity for them (Raines, 2002). This also poses a challenge to marketers because Millennials share values, preferences, and attitudes that are unlike any of the preceding generations. Hence, they are exerting more influence and control over how marketing is done.

Consumer Knowledge

It is vital that consumers are knowledgeable about their purchases as this empowers the collecting, combining, and comprehension of information, which can then be used by the consumers in making decisions in regard to their purchases (Barber, Taylor, & Strick, 2009; Brucks, 1985; Alba & Hutchinson, 1987). As consumer behaviors are influenced by this knowledge, purchase decisions are made based on the knowledge and information; thereby, influencing how an individual will behave (Aertsens, Mondelaers, Verbeke, Buysse, & Van Huylenbroeck, 2011; Ippolito, 1999). As Hunt (2003) rationalized, knowledge is formed while observing an individual during an activity. The impact of knowledge on consumer behaviors yielded findings that indicated consumers with objective and subjective knowledge react differently during decision making, information processing, and evaluation strategies (Aertsens, et.al., 2011; Barber, Taylor, & Strick, 2009; Brucks, 1985; Johnson & Russo, 1984; Rao & Monroe 1988; Selnes & Howell, 1999).

For a clearer appreciation of how consumer knowledge influences consumer actions, knowledge needs to be discussed in regard to objective knowledge and subjective knowledge. Hammond, Velikova, and Dodd (2013) expressed that there are different information sources through which consumers gain knowledge. An individual's behavior and performance depends on the knowledge that they have acquired. Therefore, objective knowledge looks at the genuineness or possession of accurate information in relation to an object. This type of knowledge links authenticity with fact and reliability. Objective knowledge is essentially knowledge that consumers have of a product gained through learning and is seen when used in decision making, planning, or performing a task (Brucks, 1985; Park, Mothersbaugh, & Feick, 1994). Objective knowledge has commonly been assessed using unprejudiced tests to determine how much knowledge an individual has about a product. It is used to determine behavior, attitude, and perceived behavioral control toward a product (Aertsens, et al., 2011; Barber et al., 2009; King & Balasubramanian, 1994).

On the other hand, subjective knowledge is self- assessed and personal authenticity knowledge. The consumer already believes they know all about the product (Brucks, 1985). Interpretation of information by subjective knowledge may either be accurate or biased. How a consumer perceives fast food depends on what they are seeing in relation to what they would already know about the fast food product. Individuals applying subjective knowledge make decisions according to what they have observed and understood (Cunliffe, 2010). Researchers will usually use this knowledge to get qualitative information with the aim of getting greater understanding of a thought and not quantifying it. Researchers learn thought trends of consumers using this approach and use the information to formulate theory (Kwortnik, 2003). Individual reports are frequently used when recording subjective knowledge on a product (Brucks, 1985).

The use of subjectivism is used extensively in qualitative studies and this helps the formation of collective conclusions and strategies to address issues (Rist, Barton, & Walker, 1983). Advanced knowledge makes the consumers skilled, resulting in their ability to comprehend observation traits and to look for information in well-organized ways (King & Balasubramanian, 1994; Brucks 1985).

As researchers King and Balasubramanian (1994) have explained, consumers who have an above average nutritional knowledge (reword) level use objective knowledge; whereas, those with below average nutritional knowledge rely on subjective knowledge when making purchasing decisions. Above average and below average levels of nutritional knowledge cause the difference in reasoning, analytical abilities, interpretation, and recall among the consumers. Millennials are said to be educated thus they have above average objective nutritional knowledge that would impact on their leading them to and are able to inform themselves through varied media sources and through socializing (Ogbeide, Fenich, Scott-Halsell, & Kesterson, 2013). It stands to reason that with their education may come as a positive attitude toward nutrition that would result in an interest to search for more information regarding nutrition; thereby, increasing their objective knowledge. Wardle, Parmenter, and Waller, (2000) noted in their study that there was a correlation between the nutritional knowledge level and healthy eating patterns. Participants who have high objective nutritional knowledge will probably make better informed choices according to the findings of Wardle, et.al., (2000). This knowledge can then be used in making better food choices. Cornell, Rodin, and Weingarten, (1989) state that food consumption behavior is subjective and external factors such as palatability influence desire and consumption. As previously mentioned, Millennials are informed and confident. So it is expected that they have higher objective knowledge, and will use this knowledge to examine, understand, and retain

information, which can be used at a later stage of purchase than those who have lower knowledge levels (Nowak, et al., 2006; Ares, Giménez, & Gámbaro, 2008). Therefore, the use of quantitative research would help shed light on the issue of weight gain among the US Millennials in relation to their use of objective knowledge in the marketing influence toward fast food.

Millennial Knowledge of Nutrition

Nutrition can be simply described as the consumption of food (WHO, 2016). The importance of nutrition cannot be over-emphasized. Nutrition, together with consumers' interest on nutritional issues, has prompted consumers to make in-depth analysis of their current diet and lifestyle patterns.

A substantial number of studies have been carried out on the Millennial generation with a limited number focusing on Millennials' nutritional knowledge (Detre, Mark, & Clark, 2010; Kolodinsky, Harvey-Berino, Berlin, Johnson, & Reynolds, 2007; Klohe-Lehman, Freeland-Graves, Anderson, McDowell, Clarke, Hanss-Nuss, & Milani, 2006). Millennials are a diverse, technologically savvy group who are consumers of education, especially through electronic media, which may allow them increased acquisition of objective knowledge though the process. This cohort grew up when nutritional education and dietary advice on reduced fat and increased consumption of complex carbohydrates was reinforced (McGuire, 2011). It would therefore, stand to reason that Millennial exposure to nutritional education messages from an early age would make them more objective when making decisions, which would help promote patterns of healthy eating among the cohort.

Wills, Schmidt, Pillo-Blocka, and Cairns (2009) pointed out that nutrition information given to consumers needed to be comprehensible and pertinent to help shape food selection, especially in comparison to the escalation of diet related diseases. Also Fahlman, Dake,

McCaughtry, and Martin (2008) found that increased nutritional knowledge yielded positive changes in eating behaviors in Middle school children. Studies found that Millennials enrolled at college campuses across the United States are increasingly concerned about their health as evidenced in their heightened need to consume foods rich in fruits and vegetables as opposed to nutrient dense foods such as fast food (Detre, et al, 2010; Kolodinsky, et al., 2007).

Differences in gender regarding acquisition and use of nutritional knowledge was observed in a study by Morse and Driskell, (2009). Furthermore, Driskell, Meckna, & Scales (2006), when investigating eating habits of university men and women at fast-food restaurants, found that 35 % females and 23% males indicated that their food choices were dependent on nutritional labels, while 51% females to 37% males reported bearing in mind healthier fast food options for their consumption. This suggests that increased nutritional knowledge could lead to healthier fast food consumption for females than males. Furthermore, Bryan (2016) noted that college students saw a connection between their nutrition behaviors and their overall health. Such findings may be attributed to an increase in objective dietary knowledge, which in turn impacts healthy eating patterns (Kolodinsky, et al, 2007).

Empirical studies highlight the influence of all social and demographic characteristics of Millennials decision making during purchase. A study by Misra (2007) on knowledge, attitudes, and label use among college students noted that undergraduate students were knowledgeable regarding nutrition, which could be attributed to their early exposure to nutrition education. Affirmed by Binkley (2006), Gracia, Loureiro, and Nayga (2007), and Turrell and Kavanagh (2006), consumers who are conversant with dietary facts were disposed to practice good consumption behaviors that could be evidenced in their eating habits. Thus, it may be inferred that Millennials with more nutritional information would be less likely to frequent fast food

outlets. Coincidentally, some studies indicate that Millennials with nutritional knowledge still eat highly dense foods (especially fast foods) but this may be due to the influence of food taste, convenience, and cost (International Food Information Council Foundation, 2013; Barreiro-Hurlé et al., 2010).

According to Zepeda and Li, Millennials are more inclined to select sustainable food items based on the ultimate benefit that the food delivers to the environment (2007). College women were found to get nutritional information from family members or from reading as opposed to getting it from friends (Morse, & Driskell, 2009). This might be because they spend more time at home with their parents (Bleemer, Brown, Lee, & Van der Klaauw, 2014), even when financially independent.

However, other researchers have come up with findings contrary to the above. As noted by Kraft (2014), Millennials try to ignore the importance of nutrition. Millennials do not leave their parents homes even when they are gainfully employed (Bleemer, et. al., 2014; Dey, & Pierret, 2014; Winsten, 2013). Parents of Millennials are involved in almost all aspects of their children's lives as they spend a longer period of time sharing close companionship and friendship with their children while they are growing up and when they go to work (White. 2015; MarksJarvis, 2015; Dannar, 2013; Twenge, & Campbell 2001).

Moreover, Hershatter and Epstein (2010) describe Millennials as being overindulged and protected, so much so that they are incapable of handling the most ordinary undertaking without guidance. It may be assumed that over dependence on their parents and too much time spent on electronic media result in the inability to do mundane household duties such as preparing meals, which leads to Millennials' ignorance of nutrition, thereby affirming Byrd-Bredbenne's point that lack of food preparation knowledge impacts general food preparation (2004).

Marketing / Advertising

Marketing is defined as the activities and processes for creating value and satisfaction, communication, and delivery that offers value to customers (Kotler, Burton, Deans, Brown, & Armstrong, 2015; AMA, 2013). There are a number of marketing tools such as advertising, promotion, packaging, and branding. Advertising, as a marketing tool, is an important factor in the sales and promotion of fast food products to consumers. It may also be used to depict a lifestyle that consumers hope to achieve (Wong, Huhman, Heitzler, Asbury, Bretthauer-Mueller, McCarthy, & Londe, 2004).

In highlighting the growth of fast food advertising, Story and French (2004) point out that food advertising practices have become intense and competitive in targeting specific groups of consumers. People form their eating habits as early as childhood (Loewenstein, Price, & Volpp, 2016; Savage, Fisher, & Birch, 2007; Patrick, & Nicklas, 2005). Therefore, fast food marketers spend a lot of time targeting children so they can build product awareness in children. This high awareness rate would translate into increased consumption of fast food, which might lead to increased BMI (Scholsser, 2012). Furthermore, Brucks (1985) adds that consumer and product knowledge are important attributes to advertising as they impact purchasing decisions.

The unparalleled fast food product growth has led to a wide assortment of food choices for prospective consumers. Growth in available food products in the US has more than doubled over the past decade. As the second largest advertiser in the American economy, the US food system uses mainly television, newspaper, magazine, billboard, and radio advertisements to build brand awareness and loyalty among consumers (Zimmerman & Shimoga, 2014; Andersen, Baker, & Sørensen, 2012; Gallo, 1999). Harris, Stiles, and Durocher (2013), and Chandon and Wansink (2012) reported that the fast food industry spent $4.2 billion on fast food advertising as

a way of encouraging frequent visits by customers. Furthermore, they alluded that the majority of the advertisements were targeted at youth and promoted high calorie menu items.

With competition aimed at getting consumers' attention, advertisers use a variety of media to communicate information about their products. Far reaching advertising methods that include traditional media along with newer internet- based methods such as direct mail, electronic communication, and nutritional labeling that serve to spread information in food advertising. Extensive marketing is driven largely by marketers' desire to develop and build brand awareness, preference and loyalty among consumers. According to Keller (2012), media creates stereotypes that are used by marketing companies to create target groups. Continuous rigorous marketing on television shows, movies, music videos, and magazines is used by marketers to target different consumer demographics (Keller, 2012). For example, fast food advertisement that targets Millennials with little to no cooking experience would be very appealing as they would not have to worry about cooking. Cooke and Wardle (2005) in their study on age and gender differences in food preferences, found a strong relationship between familiarity with products and preferences created by repeated advertising practices.

With a plethora of ways to reach consumers, Millennials have not been able to avoid this bombardment of information. Numerous influences impact the Millennial consumers' behaviors and food choices. Advertisements have been singled out as a leading factor in Millennials' choices. Millennials live in a media saturated environment (Story & French, 2004). Millennials are known to be confident and technology savvy, and to view electronic media as a source of information. As such, the internet is their primary source of trusted information (Atkin, & Thach, 2012). The use of multiple media resources may give them added shopping motivation that might have an impact on purchasing choices. (Raheem, Vishnu, & Amin, 2014; Azad &

Hamdavipour, 2012). These Millennial characteristics may have an implication for marketers, as it would necessitate marketing in a different way that would target the Millennial and entice them to buy.

The Influence of Advertising/Marketing on the Millennials

At 83 million people, Millennials are considered the largest and most influential generation of consumers currently reaching adulthood (Insurance Times, 2001). Millennials distinctive traits, lifestyles, values, behavior, and attitudes that stand out when compared to other groups, with possess a spending power that translates to over 43% of the total consumer population (Taylor, & Keeter 2010). Millennials devote an increasing amount of time to social media and web surfing (Kilian, Hennigs, & Langner, 2012; Lenhart, Purcell, Smith, & Zickuhr, 2010) where they communicate with buyers, sellers, and advertisers. As they are known to be savvy with enhanced awareness and involvement, it stands to reason that they would take time to investigate and inform themselves about products in the market. Traditional advertising used for preceding generations has been found to be non-effective among this cohort (Newman, 2015; Furlow, 2011). Millennials have been found to share ideas among each other when making a decision as opposed to being convinced by advertisements (Newman, 2015).

Contrary to previous findings, Nielsen's (2015) global survey found that Millennials are more trusting when it comes to information relayed by advertisements either through the internet, TV, and other means. Identified as being rash in nature, Millennials are increasingly vulnerable to marketing and advertisements (Pechmann, Levine, Loughlin, & Leslie, 2005). Griswold (2014) found coupons and email updates with graphic designs to be influential in grabbing the Millennial generation's attention. Freebies and reasonable pricing have been found to be a lure to

Millennials, as they allow for interaction with products and may help to generate favorable purchasing decisions (Duffet, 2015).

Health and healthy living is becoming an increasing concern among the Millennial consumers. Detre et al. (2010) found that Millennial students in the US are becoming increasingly concerned about their health. The generation that used to be known to consume high calorie dense food is switching to functional foods such as fruits and vegetables that provide benefits that can either reduce their risk of disease and/or promote good health. They are known to favor green brands that support conservation (Gunelius, 2008). Smith (2010) asserts that Millennials seek food brands that have sustainably sourced ingredients that yield a positive impact on the environment.

Few empirical studies have dealt with the impact of marketing energy dense, nutrient poor, foods and beverages to the Millennial generation (Freeman, Kelly, Vandevijverse, & Baur, 2015; Cairins, Angus, Hasting, & Caraher; 2013). Instead, studies have mainly concentrated on the eating habits of children and adolescents in regard to energy dense foods. Also, WHO (2012) has policies in place that advocate for restrictions in marketing food and beverages to children, but few apply specifically to the Millennial generation.

Fast Food Consumption

Between 1970 and 2012, the proportion of food dollars spent on fast food purchases showed a sharp upward trend, from 25.9% to 43.1%, indicating that a lot of people were eating fast foods compared to eating at home (Hwan-Lin, 2014). Time constraints, lifestyle, and growing consumer demands on food taste, variety, convenience, and entertainment have been identified as contributors to fast food eating habits. The nutritional quality of fast foods is increasingly

important in determining the overall nutritional quality of diets in the US as fast food consumption trends continue to rise (Hwan-Lin, 2014; Lin, Guthrie, & Frazao, 1999). Fast foods, on average, have a higher content of fats and less micronutrients such as calcium and fiber (Hwan-Lin, 2014; Schlosser, 2012; Wells & Buzby, 2008; Stewart, Blisard, & Jolliffe, 2006; Paeratakul, et al, 2003) and lead to weight gain and other effects.

According to the United States Department of Agriculture (USDA) Economic Research Service (2007), the average dietary intake of calories in the year 2000 was below 2,700 calories per person which constitutes increase of about 530 calories between the years 1970 and 2000. This might, be correlated to an increase in eating away from home. Thus, an improvement of the American diet could be hindered by Millennial over dependence on eating meals outside the home (Burton, & Creyer, 2004). Just as many factors affect people's food choices, these choices in turn affect the balance of energy intake, and may ultimately impact body weight composition.

The International Food Information Council (IFIC) 2013 reported that the bulk of American consumers perceive themselves as in control of their diet and their weight, but few are actually taking control. They tend to use subjective knowledge to guide their assumptions as opposed to objective knowledge. Fast food is typically low in cost, which in part may appeal to many Americans, as substantial numbers of Americans still consume fast foods regardless of nutritional problems. According to Bowman, Gortmaker, Ebbeling, Pereira, and Ludwig (2004), fast food contributes to high calorie intake within the US population. This population is overscheduled and overcommitted in their daily life; thus, they do not have time for meal preparation. Millennials make quick purchasing decisions in regard to convenience and performance (Gronbach, 2000). Millennials consider eating away from home as a social event, with an inclination to favor fast foods (Raines, 2002). The larger portion sizes, low cost, and

convenience might make fast food appealing to the Millennial consumer. Having fast food readily available everywhere makes it an easy food source. An association between an increase in fast food advertising and fast food consumption was found in adults Scully, Dixon, & Wakefield (2009). Also, Coon, Goldberg, Rogers, and Tucker (2001) found that the more children were exposed to television viewing, resulting in a higher chance of them consuming fast food later in life. Exposure to television advertising was found to result in high consumption of soft drinks and fast food in children (Andreyev, Kelly, & Harris, 2011). Currie, et.al., (2010) found evidence to suggest that the proximity of fast food restaurants significantly affects the BMI rate of ninth graders as they tend to resort to getting fast food when hungry as it is more affordable and nearer to their schools.

The Relationship between Fast Foods and Obesity

The pursuit of diversity and convenience in food consumption gave rise to the rapid growth of the fast food industry. The number of fast food restaurants in the US increased considerably over the years from around 30,000 locations in 1970 to over 233,000 locations in 2004 (National Restaurant Association, 2004). Correspondingly, figures also indicate that consumption of food away from home among US citizens covers a large share of family food spending (25.9% in 1970 to43.1% in 2102) with sales of more than US $683 billion (Todd, Mancino & Biing-Hwang, 2010).

The US obesity prevalence remains has no changed between 2003–2004 and 2011–2012 (Ogden, Carroll, Kit & Flegal, 2014). This may be attributed to the increase in food eaten away from home, especially foods that are of high caloric content, coupled with less physical activity of consumers (Pereira, et. al., 2005; Boutelle, et.al.,2007; Rosenheck, 2008; Binkley, 2008). A

study by Satia, Galanko, and Siega-Riz (2004) observed new eating habits among Millennial students who have just transitioned into college that may result in weight gain. The energy imbalance associated with high calorie consumption and less physical activity leads to excess fat accumulation. This is assessed by checking the weight against height ratio (BMI) where 25- 29 kg/m^2 is overweight and $30kg/m^2$ is obese (Fryar, et al., 2014).

Numerous studies have been conducted to determine if there is a causal relationship between fast foods and obesity (Pieroni & Salmasi, 2014; Anderson & Matsa, 2011; Currie, DellaVigna, Moretti, & Pathania, 2010; Satia, et. al., 2004). Similarly, Anderson and Matsa (2011) deliberated on the link between eating away from home and obesity. They found no evidence to suggest a causal link between eating at restaurants and obesity. Such findings imply that Millennials who are likely to be overweight, may not attribute their weight gain to restaurants**.**

Indications from a study by Satia, et.al, (2004) revealed that eating at fast food restaurants resulted in consumers developing eating habits that can heighten their risk of obesity. They also found that those who frequent such places were young adults. In their study of fast food consumption and body weight in the United Kingdom, Pieroni and Salmasi (2014) found evidence to support the relationship between fast food consumption and body weight. They hypothesized that higher availability of fast food and lower prices of meals and snacks were correlated with weight gains, particularly for overweight and obese individuals. Furthermore, they pointed out that women's BMI is sensitive to the higher intake of fast food. Also, Currie et al., (2010) found that the closer proximity of a fast food restaurant led to changes in fast food habits which were directly related to changes in weight.

Policies have been advocating for change in eating habits through measures such as

reduction in consumption of high calorie dense food. However, this has not resulted in a decline in food eaten away from home; instead there is a growth in the fast food market. The food industry floods the market with advertisements that are aimed at influencing product purchases. This advertising has not escaped the Millennials, who are becoming adults and who through frequent use of social media interact with these advertisements. Studies have shown that Millennials acknowledge the importance of healthy eating, but all admit they do not always eat healthy foods. This study therefore seeks to investigate the impact of fast food marketing on Millennials' consumption of fast food and also to explore Millennials' perception of the relationship between fast food and weight gain. The findings would help direct nutrition interventions toward Millennial nutrition behavior.

Theoretical Framework

The Theory of Planned Behavior (TPB) is a study based on Ajzen's Theory of Reasoned Action (TRA) that assesses the relationship between attitudes and behavior. This is a widely used concept in the study of human behavior and attitudes (Ajzen, 1991). Three main factors that determine the individual's intention as discussed by authors, Ajzen and Fishbein (2005), are classified as attitude, subjective norms, and perceived behavioral control. Attitude tends to be more personal and can be deduced from an individual's traits; whereas, subjective norms are based mainly on social influence with perceived behavioral beliefs ensuing from a specific achievement.

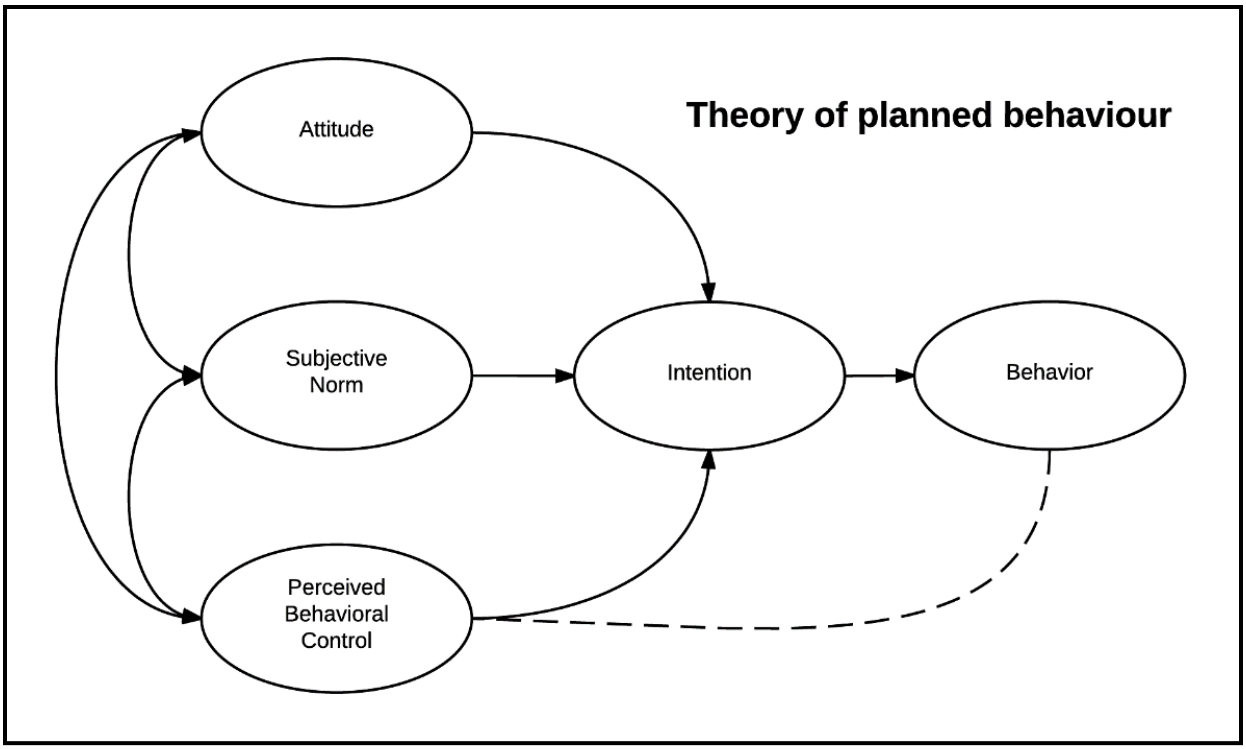


Figure 1: Theory of planned behavior source Organizational Behavior and Human Decision Processes 50, 179-211 (1991).

In a study by Shah and Sayuti (2011), attitude was found to have a positive effect on halal fast food purchasing intentions as it influences the intention of consumers to purchase halal food products. Social norm was attributed to favorable attitudes that build on the intentions. Furthermore, Shepard, Sparks, and Guthrie (1995) pointed out that beliefs and attitudes are more likely to influence fast food choices, and that what an individual holds important regarding a food product may outweigh its actual benefits and, thus, determine purchasing. Also, in a report by American Academy of Pediatrics (AAP) Council on Communications and Media, TV watching was said to expose children to food advertisements that contribute to development of poor eating habits. Similarly, Millennials who are exposed to fast food advertisements might be influenced to consume fast food. A study by Chan and Tsang (2011) investigated attitudes of

adolescents toward healthy eating in Hong Kong. Their findings highlighted the importance of perceived behavioral control in predicting intention toward eating. Engaging in eating habits was linked to personal sources, family, and intervention from mass media and government interventions (Chan & Tsang, 2011).

According to Chan and Tsang (2011), the theoretical framework provides a summarized conceptual and empirical model to measure the relationship between beliefs, attitudes, intentions, and behavior. Therefore, the theory of planned behavior (Ajzen, 1991) will be used as a basis for exploring whether Millennials' consumer beliefs and attitudes toward fast food marketing are more likely to influence the Millennial to consume fast food.

Hypotheses

Numerous studies (Aertsens, et al., 2011; Alba, & Hutchinson, 1987; Alba, & Hutchinson, 2000; Barber, et al., 2009; Cordell, 1997; Hammond, et al., 2013; Hunt, 2003; Van Steenis, et.al., 2014) have been carried out on the use of subjective and objective knowledge. They purport that self-reporting measures of knowledge (subjective knowledge) are rarely good indicators of actual knowledge as consumers are poorly attuned to their own assessment of their knowledge (Van Steenis, et.al. 2014, Alba, & Hutchinson, 2000). Hence, one of the objectives of this study was to explore, the impact of Millennials objective nutritional knowledge on fast food advertising (based upon measurable items). Therefore, the following hypotheses was proposed.

H_1: Millennials with below average objective nutritional knowledge are more likely to be influenced by fast food advertising.

What was Measured (Variables Defined)

- **Objective nutritional knowledge** is defined as factual knowledge that Millennials have of a product gained through learning and is seen when used in decision making, planning, or performing a task (Brucks, 1985; Park, Mothersbaugh, & Feick, 1994).
- **Advertising influence** is defined as an act of drawing consumers' attention to one's product leading to behavior changes without directly forcing them to happen (Wong, et. al., 2004; Hacker, 2011).
- **Subjective norms** are one's perceptions or assumptions about others' expectations of certain behaviors that one will or will not perform (Ajzen, I. (1991).

How it was Measured

- Millennial **objective nutritional knowledge** was based on the objective scores of the Millennials' in the quiz.
- Their scores were categorized into the following categories; above average objective nutritional knowledge, average objective nutritional knowledge and below average objective nutritional knowledge. Millennials who were considered to have above average objective nutritional knowledge scored 80% and above; whereas Millennials with average objective nutritional knowledge scored between 60 and 79.9 %; and lastly, Millennial with below average nutritional knowledge scored 59.9% and below. The categories were based on
- **Fast food advertising influence** this was based on self-reported items that asked participants on how fast food advertisements influenced Millennials' to consume fast food. Influence was measured using a five point Likert scale (1 = strongly disagree, 2= disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree). Millennials indicated how much they agree or disagree with the given statements (e.g., I often

consume fast food, I often listen to fast food advertisements, I am not influenced by fast food advertisements to buy fast food, and fast food advertisements influence me to consume fast food.

Why was it Measured

- **Objective knowledge:** According to Aertsens, et al., (2011) and Barber et al., (2009) objective knowledge is commonly assessed using unprejudiced tests to determine how much knowledge an individual has about a product. The questions used to test objective nutritional knowledge in this study were adapted from previous studies by authors Williams (2011), and Thielemann (2012) and were also guided by My Plate, 2010 recommendations. Based on the reliability of the previous research .70 Cronbach alpha coefficient in Thielemann (2012) study, it was deemed appropriate to follow similar protocol.
- **Fast food advertising influence:** Previous research indicated that influence is important in determining how society functions (e.g. growth of fast foods restaurants). By studying fast food advertising influence frequency, we could potentially understand why fast food consumption continues to affect Millennials differently. The questions were adapted from previous studies by authors Williams (2011), and Thielemann (2012) that were shown to be reliable.

How the Variables and or the Hypothesis is Tied to the TPB

- **Objective nutritional knowledge:** It was found that Millennials with below average objective nutritional knowledge would be influenced by fast food advertising. It has been

found that high fast food consumption is associated with subjective norms, hence the ability of fast food advertisements to convince the Millennials to consume fast food (Andreyeva,et.al 2011; Coon, et. al., 2001).

- **Fast food advertising influence:** According to Loewenstein, et. al., (2016) and Savage, et.al., (2007) eating habits are formed as early as childhood. Influence of fast food advertising is associated with attitude that result in an intention to consume fast foods, thus resulting in increased awareness that leads to increased consumption of fast food (Scholsser, 2012). Increase in the number of fast food advertisements a consumer watches creates a positive attitude that will influence advertisers which would build on the intention.

Moreover, Environmental factors around food consumption have resulted in changes in eating habits. These in turn have impacted consumption patterns among US consumers. Food eaten away from home and food advertising influence eating behavior (French, Story, & Jeffery, 2001). Fast food is viewed as a social custom among Millennials as with the booming of fast food outlets, more people are seen eating away from home. (Schlosser, 2012; Paeratakul, et al., 2003). Constant exposure to advertising may therefore have an influence on consumer choices of food. Millennials are no exception to this as they rely heavily on electronic media. Thus, the following hypothesis was proposed.

H_2: Millennials who frequently consume fast food are more likely influenced by fast food advertisements.

What was Measured (Variables Defined)

- **Advertising influence** is defined as an act of drawing consumers' attention to one's

product leading to behavior changes without directly forcing them to happen (Wong, et. al., 2004; Hacker, 2011).

- **Consumption** is defined as the act or process of consuming (Hacker, 2011).

How it was Measured

- **Fast food advertising influence** was based on self-reported items that asked participants on how fast food advertisements impacted Millennials' to consume fast food. Influence was measured using a five point Likert scale (1 = strongly disagree, 2= disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree). Millennials indicated how much they agree or disagree with the given statements (e.g., I often consume fast food, I often listen to fast food advertisements, I am not influenced by fast food advertisements to buy fast food, and fast food advertisements influence me to consume fast food.
- **Fast food consumption** was based on the self-reported responses to number of times the Millennials' eat fast food. Their scores were categorized into the following; rarely or never consume fast food, consume fast food 1-3 times a month, consume fast food 1-3 times a week and consume fast food 4 – 6 times a week. Millennials' selected the appropriate description of their fast food consumption.

Why was it Measured

- **Fast food advertising influence:** Previous research indicated that influence is important in determining how society functions (e.g. increase in numbers of fast food restaurants). By studying fast food influence patterns we would understand why fast food consumption continues to affect consumers differently. The questions were adapted from previous

studies by authors Williams (2011), and Thielemann (2012).

- **Fast food consumption:** According to Bowman, Gortmaker, Ebbeling, Pereira, and Ludwig (2004), fast food contributes to high calorie intake within the US population. This was measured to assess consumers' inclination to consume fast food. By assessing self-reported consumption.

How the Variables and or the Hypothesis is Tied to the TPB

- **Fast food advertising influence:** Influence by fast food advertisements (Behavioral control) leads to the intention by millennial consumers to consume fast foods (perceived behavioral control).
- **Fast food consumption:** The more Millennials' are exposed to fast food advertisements the more their interest will be in the fast food leading to an increased consumption of fast foods.

H_3: There is a relationship between fast food advertising and BMI.

What was Measured (Variables Defined)

- **Advertising influence** is defined as an act of drawing consumers' attention to one's product leading to behavior changes without directly forcing them to occur (Wong, et. al., 2004; Hacker, 2011).
- **BMI** is a common measure of obesity, which in adults is calculated using weight in kilograms or pounds divided by height in meters squared or inches squared (Fryar, Carroll, & Ogden, 2014).

How it was Measured

- **Fast food advertising influence** was based on self-reported items that asked participants how fast food advertisements impacted Millennials' to consume fast food. Influence was measured using a five point Likert scale (1 = strongly disagree, 2= disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree). Millennials indicated how much they agree or disagree with the given statements (e.g., I often consume fast food, I often listen to fast food advertisements, I am not influenced by fast food advertisements to buy fast food, and fast food advertisements influence me to consume fast food..
- **BMI** was based on calculation made using self-reported weights and heights. The indicators for the different categories of BMI are represented as; underweight a BMI below 18.5 kg/m², normal weight is a BMI between 18.5 and 24.9 kg/m², overweight is a BMI between 25 and 29. 9 kg/m² and lastly obese is a BMI above 30.0 kg/m².

Why was it Measured

- **Fast food advertising:** Fast food advertising targets consumers to build product recognition **(**Brucks, 1985**).** Previous research indicated that fast foods, have higher content of fats and less micronutrients. (Hwan-Lin, 2014; Schlosser, 2012; Wells & Buzby, 2008). How often Millennials consume fast food was assessed. The consumption was linked to Millennials weight, which was used to calculate BMI calculation. The questions used to assess frequency in consumption were from previous studies by Thielemann (2012) and Paugh, (2005). Based on the reliability of the previous research .70 Cronbach alpha coefficient in Thielemann (2012) study, it was deemed appropriate to follow similar protocol.

- **BMI:** BMI correlates to body fat (WHO 2015). Assessing body fat ration would help give an indication of the muscle and fat ration in the body of Millennials. The use of self-reported weight and height gave indications of individual Millennials BMI. The assessment is based on set categories by WHO.

How the Variables and or the Hypothesis is Tied to the TPB

- **Fast food advertising:** A favorable impact is created by fast food advertisement (Perceived behavioral Control) leading to the intention to consume fast foods (behavior). As a result of the behavior fast food consumption BMI would increase.
- **BMI:** The attitude Millennials have towards fast food including social norms, create an intention to consume fast foods which leads to an increase of nutrients in the body calories.

Millennials are said to want value for money. Having lower food prices could lure them into consuming more fast food than necessary. Furthermore, as studies have revealed, Millennials use a lot of electronic media to make purchases (Lenhart, Purcell, Smith, & Zickuhr, 2010). An increase in fast food advertisements on particularly through high exposure to social media which may influence their consumption of fast food, which in turn could result in higher BMI. Eating away from home may lead to overconsumption. It has been shown that Millennials like convenience. Therefore, they may be persuaded to eat fast food based on availability and ease of access. Thus, the following hypothesis was created to assess the effect of consumption:

H_4: Millennial who frequently consume fast food are more likely to have a higher BMI than non-frequent fast food consumers.

What was Measured (Variables Defined)

- **Fast food advertisements i**s defined as the promotion of fast food products by using media Bernhardt, Wilking, Adachi-Mejia, Bergamini, Marijnissen, & Sargent, (2013).
- **BMI** is a common measure of obesity, which in adults is calculated using weight in kilograms or pounds divided by height in meters squared or inches squared (Fryar, Carroll, & Ogden, 2014).

How it was Measured

- Fast food Consumption was based on a self-reported item that asked participants on their number of times they consume fast food. Their scores were categorized into the following; rarely or never consume fast food, consume fast food 1-3 times a month, consume fast food 1-3 times a week and consume fast food 4 – 6 times a week. Millennials' selected the appropriate description of their fast food consumption.
- **BMI** was based on calculation made using self-reported weights and heights. The indicators for the different categories of BMI are represented as follows; underweight a BMI below 18.5 kg/m^2, normal weight is a BMI between 18.5 and 24.9 kg/m^2, overweight is a BMI between 25 and 29. 9 kg/m^2 and lastly obese is a BMI above 30.0 kg/m^2.

Why was it Measured

- **Fast food advertising:** Fast food advertising targets consumers to build product recognition **(**Brucks, 1985**).** Previous research indicated that fast foods, have higher content of fats and less micronutrients. (Hwan-Lin, 2014; Schlosser, 2012; Wells &

Buzby, 2008). How often Millennials consume fast food was assessed. The consumption was linked to Millennials weight, which was used to calculate BMI calculation Frequency of fast foot consumption was measured as it gives an indication of the possible calories that the millennials consumer may get from fast food**.** The questions used to assess frequency in consumption were from previous studies by Thielemann (2012) and Paugh, (2005). Based on the reliability of the previous research .70 Cronbach alpha coefficient in Thielemann (2012) study it was deemed appropriate to follow similar protocol.

- **BMI:** BMI correlates to body fat (WHO 2015). Assessing body fat ratio would help give an indication of the muscle and fat ratio in the body of Millennials. The use of self-reported weight and height gave indications of individual Millennials BMI. The assessment is based on the set categories by WHO.

How the Variables and or the Hypothesis is Tied to the TPB

- **Fast food Consumption:** Frequent consumption of fast food could lead to increase in calorie intake that could lead to an increase in weight an indication of increase in BMI
- **BMI:** The attitude Millennials have towards fast food including with social norms create an intention to consume fast foods which leads to an increased consumption resulting in an increase in calories consumed.

H_5: There is a BMI difference between Millennial with above average objective nutritional knowledge and Millennial with below average objective nutritional knowledge.

What was Measured (Variables Defined)

- **Objective nutritional knowledge** is defined as knowledge that Millennials have of a product gained through learning and is often used in decision making, planning, or performing a task (Brucks, 1985; Park, Mothersbaugh, & Feick, 1994).
- **BMI** is a common measure of obesity, which in adults is calculated using weight in kilograms or pounds divided by height in meters squared or inches squared (Fryar, Carroll, & Ogden, 2014).

How it was Measured

- Millennial **objective nutritional knowledge** was based on the objective scores of the Millennials in the quiz.
- Their scores were categorized into the following; above average objective nutritional knowledge, average objective nutritional knowledge and below average objective nutritional knowledge. Millennial consumers who were considered to have above average objective nutritional knowledge scored 80% and above; whereas Millennial consumers with average objective nutritional knowledge scored between 60 and 79.9 %; and lastly Millennial consumers with below average nutritional knowledge scored 59.9% and below. The categories were based on
- **BMI** was based on calculation made using self-reported weights and heights. The indicators for the different categories of BMI are represented as; underweight a BMI below 18.5 kg/m², normal weight is a BMI between 18.5 and 24.9 kg/m², overweight is a

BMI between 25 and 29. 9 kg/m² and lastly, obese is a BMI above 30.0 kg/m².

Why was it Measured

- **Objective knowledge:** According to Aertsens, et al., (2011) and Barber et al., (2009) objective knowledge is commonly assessed using unprejudiced tests to determine how much knowledge an individual has about a product. The questions used to test objective knowledge in this study were adapted from previous studies by authors Williams (2011), and Thielemann (2012) and were also guided by My Plate, 2010 recommendations. Based on the reliability of the previous research 0.70 Cronbach alpha coefficient in Thielemann (2012) it was deemed appropriate to follow similar protocol.
- **BMI:** Previous research indicated that fast foods, have higher content of fats and less micronutrients. (Hwan-Lin, 2014; Schlosser, 2012; Wells & Buzby, 2008). BMI correlates to body fat (WHO 2015). Assessing body fat ration would help give an indication of muscle and fat ration in the body of Millennials. The use of self-reported weight and height gave indications of individual Millennials BMI. The assessment is based on set categories by WHO.

How the Variables and or the Hypothesis is Tied to the TPB

- **Objective nutritional knowledge:** The level of objective nutritional knowledge a millennial has will determines their intention to either consume or not consume fast food. According to Bell et. al. (2001) nutritional education has very little impact on knowledge and behavior. To the contrary, studies (Ogbeide et.al; Tapscott; 2008) have shown

Millennials to be different from other generation. They have been identified as knowledgeable, and make informed decisions, based on objective knowledge. Hence this study intends to find out if there is a BMI difference between Millennials with above average objective nutritional knowledge and Millennials with below average objective nutritional knowledge.

Definition of Key Terms

Millennial consumers: Millennials are born between the years 1982 till 2000 they will come of age at the turn of the century. (Nowak, et. al., 2006; Howe & Strauss, 2007).

Fast Food: Fast food is defined as convenience food of low cost that is purchased in outlets that allow for carry-out eating venues without wait service (Pereira, et.al. 2005; Rosenheck, 2008; Hacker, 2011).

Advertising: This is an act of drawing consumers' attention to one's product (Wong, et. al., 2004).

Fast Food Advertising: Fast food advertising involves promotion of fast food products by using media (Bernhardt, Wilking, Adachi-Mejia, Bergamini, Marijnissen, & Sargent, (2013).

Dietary requirements: Kinds and amounts of food available to or eaten by an individual, group, or population (Hacker, 2011).

Perceptions: The way that you notice or understand something using one of your senses (Hacker, 2011).

Influence: The power to cause changes without directly forcing them to happen (Hacker, 2011)

CHAPTER III

Methodology

This section explains the procedures used to perform this research study. This section has the following subsections: Research Design, Population and Sample, Instrumentation, Procedures, Hypotheses, and Data Analysis.

Research Design

The research design method used for this study was a quantitative research design. The environment for collecting data was not manipulated during the data collection. Furthermore, a non-probability sampling method in the form of a purposive sample was used to select respondents. The respondents were selected on the premise that they were college students who were Millennial consumers and were believed to be knowledgeable. These respondents were accessible to the researcher which reduced the cost implications of the study.

The purpose of the study was to examine the impact of fast food marketing on Millennials' consumption of fast food. It also explored Millennials perceptions of the relationship between fast food and BMI by looking at fast food consumption questions that asked about the frequency of overall fast food consumption over a time frame of a week or a month.

The data presented in this paper were collected from two surveys: an in person survey (direct data collection) and an online (web-based) survey. An online survey platform, Qualtrics, was used to design and administer the web-based survey for the population. A panel of trained experts from the University of Arkansas who were knowledgeable about food, human nutrition, and marketing were used to check the validity of the instrument.

Population and Sample

This study involved fast food marketing in relation to Millennials' behavior. As such, a purposive sample was used to assess the impact of food marketing on Millennials. To obtain a more representative sample, college-aged consumers and college personnel (those who fall in the Millennials' cohort) were selected from the University of Arkansas community in Fayetteville, Arkansas. The University's data base was used to further single out participants to obtain email addresses for sending the Qualtrics survey. Potential participants were invited by email and received a web link to a secure server by email that would enable them to complete the survey online. A Statement of Informed/Implied Consent form was attached to the questionnaire for respondents' consent before completing the questionnaire. Prior to administering the questionnaire, permission was sought from the IRB through completion of the protocol to ensure that the survey was conducted in accordance with the relevant ethical requirements and adheres to local and international guidelines relating to non-interventional studies.

Instrumentation

This nutrition knowledge questionnaire was developed based on the American Dietary Guidelines for MyPlate, 2010 and also adapted from previous research instruments from studies by Paugh (2005), Williams (2011), and Thielemann (2012) along with newly developed questions to suit the objectives of the study.

Validity of the Instrument.

To measure the internal consistency of the instrument, the Cronbach's alpha coefficient for reliability was used in association with the variation accounted for by the true score of the

"underlying construct." The usual measure of reliability in statistics was a Cronbach's alpha coefficient of 0.70 (Ary, Jacobs, & Razavieh, 2002). The reliability of the instrument was determined to be 0.75, a reliable Cronbach alpha coefficient.

The questionnaire was developed to address four different aims. Part 1 questions 1 to 10 addressed the objective nutritional knowledge of the respondents. This consisted of 10 multiple choice questions in regard to basic nutritional knowledge. Part 2 was used to measure Millennial consumer perceptions regarding fast food, eating habits, and exposure to advertisements. A total of 12 questions were used, using the 5 point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree). Part 3 was used to measure how frequency of fast food consumption among Millennial consumers. It was comprised of 10, 5 point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree) questions that also assessed the subjective knowledge of respondents. Part 4 consisted of 10 multiple choice questions, which also were used to measure the Millennial consumer perceptions regarding fast food, eating habits, and exposure to advertisements. Part 5 had five questions, which were used to gather basic demographic profiles of the respondents. The attributes collected included age, gender, weight, and height.

Measures

Objective Nutritional knowledge: This was assessed by use of eight nutritional knowledge objective questions in the survey (see question 3- 10 Appendix D). The scale represents the indicators for the categories of consumers. Consumers who were considered to have above average objective nutritional knowledge scored 80% and above; those with average objective

nutritional knowledge scores 60 – 79.9 %; and lastly those consumers with below average nutritional scored 59.9% and below.

Body Mass Index: Body mass index (BMI) for adults is calculated using weight in kilograms divided by height in meters squared (kg/m^2). The indicators for the different categories of BMI are underweight a BMI below 18.5 kg/m^2, normal weight a BMI between 18.5 and 24.9 kg/m^2, overweight a BMI between 25 and 29. 9 kg/m^2 and lastly obese a BMI above 30.0 kg/m^2.

Frequency of Consumption: This will be based on the number of times the consumer eats fast food (e.g., rarely or never, 1-3 times a month, and 1-3 times a week, 4- 6 times a week).

Influence: Influence was measured with five items on a Likert scale (1 = strongly disagree, 2= disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree). The respondent were asked to indicate how much they agree or disagree with some given statements (e.g., I often consume fast food, I often listen to fast food advertisements, I am not influenced by fast food advertisements to buy fast food, and fast food advertisements influence me to consume fast food.

Institutional Review Board: Permission was granted from University of Arkansas' Institutional Review Board for the implementation of the study (Appendix A-1). The researcher also completed the Collaborative Institutional Training Initiative training.

Data Analysis

The data was analyzed using Statistical Package for Social Sciences SPSS. Descriptive statistics were used to analyze demographic factors; whereas, inferential statistics (multivariate analysis and t-test) were used to analyze the data for the main objectives of the study

Hypothesis 1: A MANOVA test was used to determine if Millennials with below average objective nutritional knowledge were more likely to be influenced by fast food advertising.

Hypothesis 2: An independent sample t-test was conducted to determine if Millennials who consume fast foods were more likely influenced by fast food advertisements.

Hypothesis 3: A MANOVA test was used to determine if there was a relationship between the fast food advertising and BMI.

Hypothesis 4: A MANOVA test was used to determine if Millennials who frequently consume fast food were more likely to have a higher BMI than non-frequent fast food consumers.

Hypothesis 5: An independent sample t-test was conducted to determine if there is a BMI difference between Millennials with above average objective nutritional knowledge and consumers with below average objective nutritional knowledge.

The level of significance was set at .05 to test the acceptability of the stated hypotheses.

CHAPTER IV

Results

The main objective of this chapter is to analyze, interpret and present the data that was obtained from the findings. The results of this study are being presented in the order of objectives. The data used in this study were tested for validity and reliability using the Cronbach alpha reliability test. A Cronbach's alpha coefficient of 0.70 or above is a distinctive measure for the survey instrument reliability (Ary, et. al., 2002). The data received a .75 Cronbach alpha coefficient, which indicated that the data were reasonably reliable.

Participants Characteristics

The results of the participant profile in terms of their gender, age, and education level are listed in Table 1. A total of 507 participants completed either the qualtrics (online) survey or direct (in person) survey. There were 358 (70.6 %) female, 146 (28.8%) male with 3 (0.6%) in the category of other. Correspondingly, the dominant education level was junior/senior 278 (54.8 %), freshman/sophomores 98 (19.3 %) followed by graduate education 72 (14.2 %) and lastly high school 58 (11.4 %). The average age range for the participants was 20 to 25 years. As appropriate, the respondents had high levels of education, as they were all college students.

Table 1. Demographics: Gender, Age and Education Level

		N	Percentage
Age	Below 20	125	24.70%
	20 – 25	300	59.20%
	26 – 30	44	8.70%
	31 – 40	24	4.70%
	Above 41	13	2.60%
	Total	507	100.00%
Gender	Male	146	28.80%
	Female	358	70.60%
	Other	3	0.60%
Education Level	Less than High School	-	-
	High School	58	11.40%
	Freshman/ Sophomore	98	19.30%
	Junior / Senior	278	54.80%
	Graduate	72	14.20%

Table 2 shows weight distribution based on BMI calculations for the college students computed using their given height and weight. Overweight and obesity are defined by the WHO, (2015) as abnormal or excessive fat accumulation that presents a risk to an individual's health. Body mass index (BMI) is used to assess these factors where, BMI < 18.5 is underweight, BMI 18.5 – 24.9 is normal weight, BMI 25.0 – 29.9 is overweight and BMI > 30.0 is obese (Fryar, et. al., 2014).

Based on the above guidelines the results obtained from 507 respondents indicate that there were 17 underweight, 312 normal, 125 overweight and 45 obese. A 39. 4% of participants reported that they consume fast food 1- 3 times a week. Fast food consumption is normally associated with eating food that is high in calories. Thus frequent consumption of fast food in a week would translate to a higher intake of calories than the individual recommended amounts. As a result, it is assumed that the increased calories would translate to a higher BMI. These results might indicate why some of the respondents had high BMI (overweight and obese).

Table 2. Weight Distribution

		N	Percentage
BMI	Underweight	17	3.47%
	Normal	312	61.50%
	Overweight	125	24.70%
	Obese	45	8.90%
	Total	499	100.00%

Tests of Hypotheses

To test the hypothesis stated in the study, a number of tests were carried out. The level of significance for testing all the hypotheses was set at alpha level of .05.

H_1: Millennials with below average objective nutritional knowledge are more likely to be influenced by fast food advertising.

A one way MANOVA was conducted to determine if Millennials with below average objective nutritional knowledge are likely influenced by fast food advertising. The effect of objective nutritional knowledge on the dependent variable "fast food advertisements influence me to buy fast food" MANOVA results indicate that objective nutritional knowledge [Pillai's Trace = .038, F (8,976) = 2.371, $\rho < .016$, η^2 = .019] significantly affects the dependent variable "fast food advertisements influence me to buy fast food."

Univariate ANOVA and Bonferroni post hoc tests were conducted as follow-up tests. ANOVA indicated that there is a statistically significant relationship between objective nutritional knowledge and listening to fast food advertisements [F (2,490) = 4.18, $p < .016$, η^2 = .017]. Bonferroni post hoc tests indicated a significant difference between the groups "below average nutritional knowledge" (M= 2.15, S.D. = 1.08) and "above average nutritional knowledge" (M= 1.98, S.D. = 1.06). The mean scores for the "below average group" (M= 2.15) was found to be higher than those of "average group" (M= 2.08). This gives an indication that

consumers with below average objective nutritional knowledge are influenced by fast food advertisements.

Results of the pairwise comparison indicated that there was a significant difference in how fast food advertisements influence consumers to buy fast food among consumers with "below average nutritional knowledge" (M= 2.15, S.D. = 1.09) versus consumers with "above average nutritional knowledge" (M= 1.98, S.D. = 1.06), P < 0.01 (See Table 3).

Table 3. The Impact of Nutritional Knowledge on Listening to Fast Food Advertisements

	Fast Food Influence	N	Mean	S.D.	df	F	P
Objective knowledge	Below Average	163	2.15	1.09	2	4.180	0.01
	Above Average	116	1.98	1.06			

H_2: Millennials who frequently consume fast foods are more likely influenced by advertisements.

An independent sample t test was conducted to determine if Millennials who frequently consume fast foods are more likely influenced by advertisements. The results of the t-test show that there is a statistically significant difference in the self-report by consumers of frequency of fast food consumption conditions (t = -3.08, p = .003) between consumers who "rarely to never" consume fast food (M= 1.65, S.D. = 1.09) and those who consume fast food "4 -6 times a week" (M= 2.33, S.D. = 1.02). There is a statistically significant difference between the mean of those consumers who "rarely or never" consume fast foods compared to those who consume fast food "4-6 times a week." The result of this analysis indicated a significant relationship between the participants who consume fast food "4 – 6 times a week" and the influence of fast food advertisements. Similarly, the result of this analysis indicated a significant relationship between

the participants who consume fast food "1 – 3 times a week" and the influence of fast food advertisements (see Table 4).

Table 4. The Impact of Advertisement on Fast Food Consumption

	Consumption of Fast Food	N	Mean	S.D.	t	df	P
Fast Food Influence	Rarely or Never	84	1.65	1.09	-3.08	115	< 0.001
	4 -6 times a Week	33	2.33	1.02			
Fast Food Influence	Rarely or Never	84	1.65	1.09	-4.39	281	< 0.001
	1 -3 times a Week	199	2.28	1.11			

H_3: There is a relationship between fast food advertising and BMI.

The findings from a one way MANOVA conducted to determine the relationship between fast food marketing and BMI based on the dependent variables weight category. MANOVA results indicate that [Pillai's Trace = .102, F (16, 1960) = 3.198, $\rho < .001$, $\eta^2 = .025$] fast food advertising may have a significant impact on BMI category.

Univariate ANOVA and Bonferroni post hoc tests were conducted as follow-up tests. ANOVA indicated that BMI category significantly differs for the group, "I often listen to fast food advertisements" [F (4, 490) = 9.014, p < .001, $\eta^2 = .069$]. Results of the multiple comparison indicated that there was a significant difference between the participants who are categorized under "normal weight" (M= 2.42, S.D. = 1.18) versus those who are categorized as "obese" (M= 3.25, S.D. = 1.26) p < .001 in regard to the influence of fast food advertisements. Similarly, there is a significant difference between the participants who are categorized under "normal weight" (M= 2.42, S.D. = 1.18) versus those who are categorized as "overweight" (M= 2.83, S.D. = 1.19) p < .010 in regard to the influence of fast food advertisements (see Table 5).

Table 5. The Relationship between Fast Food Advertisements and Weight

	Fast Food Influence	N	Mean	S.D.	df	F	P
Weight Category	Normal	311	2.42	1.18	4	9.014	0.001
	Obese	44	3.25	1.26			
Weight Category	Normal	311	2.42	1.18	4	9.014	0.010
	Overweight	124	2.83	1.19			

H_4: Millennials who frequently consume fast food are more likely to have a higher BMI than non-frequent fast food consumers.

A one way MANOVA was conducted to determine the relationship between fast food consumption and BMI. MANOVA results indicated a significant relationship between fast food consumption and BMI [Pillai's Trace = .102, F (16, 1960) = 3.198, P < .001, η^2 = .025].

Univariate ANOVA and Bonferroni post hoc tests were conducted as follow-up tests. ANOVA indicated that there is a significant relationship between BMI and the consumption of fast food [F (4, 490) = 6.80, p < .001. Results of the multiple comparison indicated that there was a significant difference between the participants who are of normal weight, with "normal weight" (M= 1.96, S.D. = 1.02) versus those who are "obese" (M= 2.77, S.D. = 1.20) p < .001 in regard to the consumption of fast food. Similarly, there was a significant difference between the participants who are of "normal weight" (M= 1.96, S.D. = 1.02) versus those who are "overweight" (M= 2.27, S.D. = 1.08) p < .043 in regard to the consumption of fast food (see Table 6).

Table 6. The Impact of Fast Food Consumption on Weight

	Consumption of fast food	N	Mean	SD	df	F	P
Weight Category	Normal	311	1.96	1.02	4	6.798	< 0.001
	Obese	44	2.77	1.20			
Weight Category	Normal	311	1.96	1.02	4	6.798	0.043
	Overweight	124	2.27	1.08			

H_5: There is a BMI difference between Millennials with above average objective nutritional knowledge and consumers with below average objective nutritional knowledge.

An independent t test was conducted to determine if there is a BMI difference between Millennials with above average objective nutritional knowledge and consumers with below average objective nutritional knowledge. The results of the t-test (see Table 7) show that there is a no statistical significant difference (F = 275, P = 0.465) in the BMI of Millennial consumers with "above average objective nutritional knowledge" (M = 2.34, S.D. = .65) and those with "below average objective nutritional knowledge" (M = 2.41, S.D. = .79).

Table 7. The Relationship between Nutritional Knowledge and Weight

	Nutritional Knowledge	N	Mean	SD	t	df	P
Weight Category	Below Average	161	2.409	0.786	0.731	275	0.465
	Above Average	116	2.344	0.647			

Discussion

The overall purpose of the study was to test the impact of fast food marketing on Millennials. The researcher examined ways in which fast food marketing impacts the Millennials' fast food consumption and also explore Millennials' perceptions of the relationship between fast food and BMI.

Hypothesis 1 stated that Millennials with below average objective nutritional knowledge are more likely to be influenced by fast food advertising. It was proposed that objective nutritional knowledge impacts how consumers listen and are influenced by fast food advertisements. In support of this, researchers (Klohe-Lehman, et. al., 2006; Turrell, & Kavanagh, 2006) linked inequalities in objective nutrition knowledge as the main determinant of consumer eating patterns. The research found that, the lower the Millennials objective nutritional knowledge the higher the probability that they may be influenced by advertisements. These findings affirm Bell et. al. (2001) that argues that nutritional education has very little impact on knowledge and behavior. Authors King, and Balasubramanian, (1994); Rao & Monroe (1988) and Brucks (1985) pointed out that below average knowledge consumers rely on subjective knowledge for decision making which makes them dependent on what they think they know to make informed choices. Fahlman, et. al., (2008) also identified an association between objective nutritional knowledge and eating patterns linking improved knowledge to objectivity. As such, Millennials with above average objective nutritional knowledge were more disposed to being objective as compared to those with below average objective nutritional knowledge when listening to fast food marketing and would thus make better decisions compared to Millennials with below average objective nutritional knowledge.

Hypothesis 1 was supported by the positive association between below average objective nutritional knowledge and the influence by fast food advertisements. This indicates that Millennials with below average objective nutritional knowledge would listen to more fast food advertisements which could potentially influence them to consume more fast food.

Hypothesis 2 looked to find out if Millennials who frequently consume fast food are more likely influenced by fast food advertisements. The results indicate a positive association between the impact of advertisements on fast food consumption.

The measurement of the frequency of fast food consumption was based on “rarely or never” against “1- 3 times a week” and “rarely or never” against 4-6 times a week. The higher the level of fast food advertisements influence as measured weekly the more the consumption of fast food that is noted. As more consumers were exposed to advertisements the more they were inclined to build brand recognition that would promote buying. Barr-Anderson, et. al., (2009) pointed that viewing television during youth stage plays a leading role in laying the basis for future eating habits as it was used primarily for advertising food products to viewers. Also Strasburger, (2011) findings link the increase in fast food consumption to prolonged television viewing where vast amounts of fast food advertisement are aired daily that may impact the consumer decisions. Since Millennial are identified as high users of technology and having being predisposed to media viewing involving fast food they may be prone to high fast food consumption. As indicated in the study findings, consumers who “consume fast food 4 – 6 times a week” (M = 2.33) have a higher mean in regard to the influence of fast food advertising as compared to consumers who “rarely or never consume fast food” (M = 1.65) indicating that they may be prone to watching a lot of advertisements that result in increased consumption among the consumers.

Hypothesis 3 proposed that there is a relationship between fast food advertisements and BMI. Results reveal that there is a significant difference between listening to fast food advertisements and BMI. Obese (M 3.25) and Overweight (M = 2.83) consumers who are prone to listen to fast food advertisements end up consuming more fast food which would result in

higher BMI as compared to normal weight consumers (M = 2.42). Accordingly Coon et. al., (2001) found dietary habits to be shaped by television viewing, where they interact with a lot of advertisements. Satia, Galanko, & Siega-Riz, (2004) found that when students enter college life they adopt new eating habits as they live away from home that may result in increased BMI.

Hypothesis 4 Millennials who frequently consume fast food are more likely to have a higher BMI than non-frequent fast food consumers. The findings show that fast food consumption significantly affects BMI. Fast food is as energy dense poor nutrient food. (Satia, et. al., 2004; Rosenheck, 2008) ascertain that consumption of fast food is associated with increased energy intake which leads to a higher BMI. For consumers who find consuming fast food as pleasant they eat fast food while even though it has BMI implication as it would be satisfying based on the attitude they have formed towards fast food. The frequency of consumption results in an association with the food and, as such, would result in re-consumption. Findings show that consuming fast food in large quantities translate to excess calorie intake "normal weight "(M = 1.96) compared to 'Over weight" (M = 2.27) and "Obese" (M = 2.77) that may lead to obesity.

Hypothesis 5 There is a BMI difference between Millennials with above average objective nutritional knowledge and consumers with below average objective nutritional knowledge. The results of the t-test show that there is a no statistical significant difference in the relationship between objective nutritional knowledge and BMI.

It would be assumed that nutritional education would lead to improvement of objective nutrition knowledge use among Millennials (USDA, 2010). Authors Bell, et.al (2001) found that nutrition education has very little impact on knowledge and ultimately behavior. Also supporting this, Wai-Ling's (2004) found that though consumers may be health conscious, they may not

make healthy decisions when selecting food. This may also be the reason why Millennials do not use their objective nutritional knowledge of fast food to influence their purchasing decisions. Worsley, (2002) affirms this that teaching of nutritional knowledge does not translate into application of the knowledge as the consumers choose what to do with the information. Therefore objective nutritional knowledge does not affect weight. It is the consumption patterns that will determine the weight difference. The decision to eating fast food is based on the consumers' attitude towards fast food. A consumer's level of mere objective nutritional knowledge has no impact on eating fast food. Knowledge of nutrition by Millennials is not the main factor behind their consumption behaviors. Indicating that there are other reasons that will make Millennials with adequate objective nutritional knowledge less likely to comply with recommended nutritional standards.

CHAPTER V

Conclusion

Fast food consumption is high among Millennials who are transitioning from adolescence to adulthood. It is an easy source of food for most of the Millennials who have moved from home where they used to get their meals prepared by their parents. An increase in fast food consumption leads to high caloric intake, which later translates to a high BMI. The findings of this study is as follows: (1) Millennials with below average objective nutritional knowledge are more likely to be influenced by fast food advertising. (2) Millennials who consume fast foods are more likely influenced by fast food advertisements. (3) There is a relationship between fast food advertisements and BMI. (4) Millennials who frequently consume fast food are more likely to have a higher BMI than non-frequent fast food consumers. (5) There is no statistical significant difference in the relationship between mere nutritional knowledge and BMI.

The findings indicated that 61.3 % of the participants perceived their weight to be normal and healthy. The findings also indicated that the Millennials in this study further indicated that they are familiar with MyPlate for Americans (51.5%), and the suggested daily nutrient requirements for both males (54.2%) and females (58.8%) an indication of mere knowledge but, still consumed more than the recommended calorie intake based on their self-report of fast food consumption on a weekly basis (45.9%). Hence, the more frequent fast food was consumed the higher the BMI scores. Findings also showed that there is no relationship between objective nutritional knowledge and BMI. Although Millennials are technologically savvy, they do not necessarily use the knowledge they have to inform their consumption decisions especially of fast food. Attitudes and behaviors that are held by Millennials regarding fast foods are key in determining Millennials fast food consumption habits. Ogbeide et. al., (2013) and Tapscott (2008) purport that Millennials are a different cohort as compared to other generations as they

have different values, preferences, and attitudes. Methods used to advertise to previous cohorts were found not effective for Millennials'. (Newman, 2015; Furlow, 2011). Studying impact specifically on Millennials would help shed light on ways in which nutritional education, policy development can be targeted to impact Millennials as it has been shown that they respond differently in comparison to other cohorts. The findings of this study add ~~on~~ to ways in which advertisers can influence Millennials.

Implications

The primary implication of this study indicated that the level of objective nutritional knowledge has no impact on BMI. Rather, it is the frequency of fast food consumption that potentially influences the BMI as those with higher BMI also consumed fast food more frequently. This ties to findings by Bell et. al. (2001) that argues that nutritional education has very little impact on knowledge and behavior. Millennials are known to have higher levels of education so it seemed safe to assume that would lead to less fast food consumption. But the findings of this study indicate the need to reevaluate how nutritional knowledge is conveyed especially to Millennials. Hence there is a need for continued nutritional knowledge education in which policy makers use Millennials traits such as their interaction in the web to enhance Millennials application of nutrition knowledge. A web based educational interaction about fast food consumption could allow for facilitation, sharing and deliberation of information among Millennials which has been shown to be effective in their decisions making patterns. As a result, this could lead to better application of objective nutritional knowledge that could help in making informed changes in dietary eating habits. Furthermore, changes in Millennials behavior could influence eating patterns of the future cohort. According to Loewenstein, et.al., (2016), Savage, et.al., (2007) and

Patrick, & Nicklas, (2005) people form impressions as early as child hood, so children of Millennials would be able to observe dietary eating habits from their parents resulting in an enhancement of their own knowledge. There is a need for evaluation of existing educational interventions to try and incorporate the changes relevant to the current generation.

Limitations

The study was limited to University of Arkansas students. The results can therefore, not be generalized to the whole Millennial population. Convenience sample is limited and does not represent the views of other Millennials' in different universities of the world. Self-reporting is also a limitation in that participants may not give a true reflection of their heights and weights (bias) thus incorrect calculations of BMI may be a limitation. Due to sample size reliability and validity of the study may be limited. A longitudinal study involving monitoring of behavioral patterns to shed light into fast food consumption and marketing over an extended time frame is recommended. Although subjective knowledge of nutrition was measured in the survey, authors Nowak, et. al., (2006) and Howe & Strauss, (2007) have identified Millennials as being knowledgeable. Therefore, it was assumed that Millennials would display more objective knowledge traits than subjective knowledge traits hence the use of the objective measure for this study.

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Appendix A

Introduction Letter/E-Mail

Dear Sir/Madam,

My name is Kabo Segokgo. I am a master's student in the School of Human Environmental Sciences, with emphasis in Human Nutrition and Hospitality Innovations at the University of Arkansas. As part of my master's thesis, I am conducting a study on The Impact of Fast Food Marketing on Millennial Generation.

The information you provide by completing this survey will contribute useful information about issues of fast food marketing and obesity. It could also inform policy development and educational programs aimed at enhancing consumers' eating habits.

You may withdraw from the survey at any time without consequence to you. It should take you about 10-15 minutes to complete the questionnaire. Click the following website to access the survey now: http://uark.surveylink.com.

Thank you

Godwin-Charles Ogbeide, M.B.A., Ph.D.
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Expires: 05/04/2017

Appendix B

The Impact of Fast Food marketing on Millennial Generation

Introduction
My name is Kabo Segokgo. I am a master's student in the School of Human Environmental Sciences, with emphasis in Human Nutrition and Hospitality Innovations at the University of Arkansas. As part of my master's thesis, I am conducting a study on The Impact of Fast Food Marketing on Millennial Generation.

Risks and Benefits: There are no anticipated risks to participating in the study. The findings of this study could provide a solution to the issue of fast food marketing and obesity. It could also inform policy development and educational programs aimed at enhancing consumers' eating habits.

Voluntary Participation: Your participation in the research is completely voluntary. If you choose to participate and complete the questionnaires, you may leave any items blank that you do not want to answer. You may withdraw from the survey at any time without consequence to you. It should take you about 10 - 15 minutes to complete the questionnaire.

Confidentiality: All responses will be anonymous and all data will be kept confidential to the extent allowed by law and University policy. All data will be combined and only group summaries will be included in the survey reports. No data will be reported in a manner that would allow a reader to associate any responses to individual respondents. Results from the research will be reported as aggregate data.

Right to Withdraw: You are free to refuse to participate in the research and to withdraw from this study at any time. Your decision to withdraw will bring no negative consequences — no penalty to you.

If you have any questions or concerns about this study you may contact my advisor Dr. Godwin-Charles Ogbeide or Kabo T. Segokgo through any of the means below. For questions or concerns about your rights as a research participant, please contact Ro Windwalker, the University's Compliance Coordinator, at (479) 575-2208 or by e-mail at irb@uark.edu.

Ogbeide, M.B.A., Ph.D. Associate Professor Human Nutrition and Hospitality Innovation School of Human Environmental Sciences University of Arkansas HOEC 118 Fayetteville, AR 72701 Phone: 479-575-2579 Email: gogbeide@uark.edu Fax: 479.575.7171	**Kabo T Segokgo** Graduate Student Human Nutrition and Hospitality Innovations School of Human Environmental Sciences University of Arkansas HOEC 118 Fayetteville, AR 72701 Phone: 479-575-7538 Email: ktsegokg@uark.edu

By filling out and submitting the survey you are consenting to participate. You acknowledge that you read the description, including the purpose of the study, the procedures to be used, the potential risks and benefits, the anonymity of all responses, as well as the option to withdraw from the study at any time.

Please respond immediately, click **the following website to access the survey now:** http://uark.surveylink.com.

Thank you in advance for taking the time to help with this important project.
This e-mail has been generated in accordance with the UARK E

IRB #16-04-725
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Appendix C

The Impact of Fast Food marketing on Millennial Generation

Introduction
My name is Kabo Segokgo. I am a master's student in the School of Human Environmental Sciences, with emphasis in Human Nutrition and Hospitality Innovations at the University of Arkansas. As part of my master's thesis, I am conducting a study on The Impact of Fast Food Marketing on Millennial Generation.

Risks and Benefits: There are no anticipated risks to participating in the study. The findings of this study could provide a solution to the issue of fast food marketing and obesity. It could also inform policy development and educational programs aimed at enhancing consumers' eating habits.

Voluntary Participation: Your participation in the research is completely voluntary. If you choose to participate and complete the questionnaires, you may leave any items blank that you do not want to answer. You may withdraw from the survey at any time without consequence to you. It should take you about 10 - 15 minutes to complete the questionnaire.

Confidentiality: All responses will be anonymous and all data will be kept confidential to the extent allowed by law and University policy. All data will be combined and only group summaries will be included in the survey reports. No data will be reported in a manner that would allow a reader to associate any responses to individual respondents. Results from the research will be reported as aggregate data.

Right to Withdraw: You are free to refuse to participate in the research and to withdraw from this study at any time. Your decision to withdraw will bring no negative consequences — no penalty to you.

If you have any questions or concerns about this study you may contact my advisor Dr. Godwin-Charles Ogbeide or Kabo T. Segokgo through any of the means below. For questions or concerns about your rights as a research participant, please contact Ro Windwalker, the University's Compliance Coordinator, at (479) 575-2208 or by e-mail at irb@uark.edu.

Ogbeide, M.B.A., Ph.D. Associate Professor Human Nutrition and Hospitality Innovation School of Human Environmental Sciences University of Arkansas HOEC 118 Fayetteville, AR 72701 Phone: 479-575-2579 Email: gogbeide@uark.edu Fax: 479.575.7171	**Kabo T Segokgo** Graduate Student Human Nutrition and Hospitality Innovations School of Human Environmental Sciences University of Arkansas HOEC 118 Fayetteville, AR 72701 Phone: 479-575-7538 Email: ktsegokg@uark.edu

If you agree to participate in this study, please read the informed consent below, fill out the questionnaire, and insert only the completed questionnaire in the provided envelop. By filling out and submitting the survey you are consenting to participate. Keep the Informed Consent Letter with Consent Form for your record purposes.

Informed Consent: I have read the description, including the purpose of the study, the procedures to be used, the potential risks and benefits, the anonymity of all responses, as well as the option to withdraw from the study at any time. Each of these items has been explained to me by the investigator. By filling out and submitting the survey I am consenting to participate.

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Appendix D

The Impact of Fast Food Marketing on Millennial Generation Questionnaire

Part 1: Listed below are a set of multiple choice questions about consumer knowledge of healthy nutrition. Please select the answer that best represents the question.

1. Do you know the dietary guidelines of MyPlate for Americans?
   a. Yes
   b. No

2. Do you use MyPlate when selecting food?
   a. Yes
   b. No

3. What is the estimated range of the calorie needs per day for a moderately active male?
   a. 1200 - 1800
   b. 1800 - 2200
   c. 2200 - 2800
   d. 3000 – 4000

4. What is the estimated range of the calorie needs per day for a moderately active female?
   a. 1200 - 1800
   b. 1800 - 2200
   c. 2200 - 2800
   d. 3000 – 4000

5. According to USDA, MyPlate is composed of which of the following groups?
   a. Fruits, Grains, Vegetables, Proteins, and Dairy
   b. Dairy, Proteins, Vegetables and Grains
   c. Proteins, Grains, Fruits and Vegetables
   d. None of the above

6. Which of the following food groups should be eaten the most?
   a. Grains
   b. Fruits
   c. Dairy
   d. Meats

7. Which of the following contains the most calories per gram?
   a. Carbohydrates
   b. Fats
   c. Proteins
   d. Vegetables

8. Which of the following USDA dietary guidelines is correct?
   a. Drink low fat milk (10%)
   b. Drink low fat milk (1%)
   c. Drink fat free Milk
   d. Both B and C

9. Based on my plate guidelines, which of the following is correct. Make:
a. Half your plate grain, fruits and vegetables
b. Half your plate fruits and vegetables
c. Half your plate proteins, fruit and vegetables
d. Half your plate grains, proteins and vegetable

10. According to USDA, which of the following is true about the dietary guidelines for consumers?
a. Reduce consumption of sugary beverages
b. Reduce high fat content milk
c. Reduce intake of food high in sodium
d. All of the above

Part 2: Listed below are various statements about consumers' perceptions, indicate how much you agree or disagree with the statements.

Key: 1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree

11. _____ Compared to an average person, I would say I am interested in healthy nutrition
12. _____ I often apply nutrition knowledge when purchasing fast food
13. _____ I am not knowledgeable about healthy eating
14. _____ I am knowledgeable about fast food nutritional content
15. _____ I am knowledgeable about fast food
16. _____ I often consume fast food
17. _____ Consuming fast food is pleasant and pleases me
18. _____ I buy fast food despite knowing that it may not be healthy for me
19. _____ I don't pay attention to the fast food products I buy and eat
20. _____ I often listen to fast food advertisements
21. _____ I am not influenced by fast food advertisements to buy fast food
22. _____ Fast food advertisements influence me to consume fast food.

Part 3: (motivational questions)

Using the key below, indicate how much the following factors influence you to consume fast food.

Key: 1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree

23. _____ Lack of time
24. _____ Cost of healthy foods
25. _____ Lack of cooking skills
26. _____ Lack of willpower
27. _____ I like fast food
28. _____ Easily accessible in my environment (convenience)
29. _____ Eating habits
30. _____ Busy lifestyle
31. _____ Limited availability of healthy food

Part. 4: Listed below are multiple choice questions. Indicate your perception regarding the following.

32. How would you describe your current diet?
    a. Very poor
    b. Poor
    c. Fair
    d. Good
    e. Very good

33. For your age, how would you describe your health
    a. Very poor
    b. Poor
    c. Fair
    d. Good
    e. Very good

34. How often do you eat a homemade meal?
    a. Rarely or never
    b. 1-3x a month
    c. 1-3x a week
    d. 4-6x a week
    e. Everyday

35. How would you rate your cooking skills?
    a. Non existent
    b. Existent
    c. Average
    d. Good
    e. Excellent

36. Where have you learned the most about nutrition?
    a. Family
    b. Friends
    c. School
    d. Media

37. How often do you consume fast foods?
    a. Rarely or never
    b. 1-3x a month
    c. 1-3x a week
    d. 4-6x a week

38. At which meal time do you eat fast food the most?
a. Breakfast
b. Morning snack
c. Lunch
d. Afternoon snack
e. Dinner
f. After dinner snack

39. How often do you listen to fast food advertisements?
a. Rarely or never
b. 1-3x a month
c. 1-3x a week
d. 4-6x a week
e. Every day

40. How do you perceive your body weight?
a. I am overweight
b. I am of normal weight, but am gaining weight
c. I am of normal weight
d. I am underweight

Part 5:

41. Are you a Male or Female?
a. Male
b. Female
c. Others

42. How old are you?
a. Under 20 years old
b. 20-25 years old
c. 26-30 years old
d. 31-40 years old
e. 41 and above

43. What level of education do you have?
a. Less than high school education
b. High school
c. Freshman /Sophomore at University
d. Junior/ Senior at University
e. Graduate education

44. What is your current weight (without shoes)? _____ lbs
45. What is your current height (without shoes)? _____ feet _____ inches

Appendix E

UNIVERSITY OF ARKANSAS

Office of Research Compliance
Institutional Review Board

May 5, 2016

MEMORANDUM

TO:	Kabo Tuelo Segokgo Godwin-Charles Ogbeide
FROM:	Ro Windwalker IRB Coordinator
RE:	New Protocol Approval
IRB Protocol #:	16-04-725
Protocol Title:	*The Impact of Fast Food Marketing on the Millennial Generation*
Review Type:	☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 05/05/2016 Expiration Date: 05/04/2017

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (https://vpred.uark.edu/units/rscp/index.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 500 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or irb@uark.edu.

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Appendix F

Frequencies

Statistics

		How old are you	What level of education do you have	What is your current weight	What is your current height	BMI
N	Valid	507	507	505	507	500
	Missing	0	0	2	0	7
Mean				153.6903		24.1575
Std. Deviation				40.06494		4.69566
Variance				1605.199		22.049
Minimum				.00		.00
Maximum				320.00		53.20

Frequency Table

Do you know the dietary guide lines of My Plate for Americans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	No	245	48.3	48.3	48.5
	Yes	261	51.5	51.5	100.0
	Total	507	100.0	100.0	

Do you use My Plate when selecting food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	432	85.2	85.2	85.2
	Yes	75	14.8	14.8	100.0
	Total	507	100.0	100.0	

The calorie needs per day for a moderately active male

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	.4	.4	.4
	1200 – 1800	13	2.6	2.6	3.0
	1800 – 2200	193	38.1	38.1	41.0
	2200 – 2800	275	54.2	54.2	95.5
	3000 – 4000	23	4.5	4.5	100.0
	Total	507	100.0	100.0	

The calorie needs per day for a moderately active female

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1200 – 1800	162	32.0	32.0	32.0
	1800 – 2200	298	58.8	58.8	90.7
	2200 – 2800	43	8.5	8.5	99.2
	3000 – 4000	4	.8	.8	100.0
	Total	507	100.0	100.0	

My Plate is composed of which of the following groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Fruits , grains, vegetables, proteins and dairy	396	78.1	78.1	78.3
	Dairy, proteins, vegetables and grain	35	6.9	6.9	85.2
	Protein, Grains, fruits and vegetables	70	13.8	13.8	99.0
	None of the above	5	1.0	1.0	100.0
	Total	507	100.0	100.0	

Which of the following food groups should be eaten the most

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Grains	277	54.6	54.6	54.8
	Fruits	179	35.3	35.3	90.1
	Dairy	4	.8	.8	90.9
	Meats	46	9.1	9.1	100.0
	Total	507	100.0	100.0	

Which of the following contains the most calories per gram

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Carbohydrates	147	29.0	29.0	29.0
	Fats	325	64.1	64.1	93.1
	Proteins	33	6.5	6.5	99.6
	Vegetables	2	.4	.4	100.0
	Total	507	100.0	100.0	

Which of the following USDA dietary guidelines is correct

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Drink low fat milk (10%)	21	4.1	4.1	4.3
	Drink low fat milk (1%)	138	27.2	27.2	31.6
	Drink fat free milk	32	6.3	6.3	37.9
	Both B and C	315	62.1	62.1	100.0
	Total	507	100.0	100.0	

Based on My plate guidelines which of the following is correct Make

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	.4	.4	.4
	Half your plate grain, fruits and vegetables	75	14.8	14.8	15.2
	Half your plate fruits and vegetables	270	53.3	53.3	68.4
	Half your plate proteins, fruits and vegetables	139	27.4	27.4	95.9
	Half your plate grains, proteins and vegetables	21	4.1	4.1	100.0
	Total	507	100.0	100.0	

Which of the following is true about the dietary guidelines for consumers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	.6	.6	.6
	Reduce consumption of sugary beverages	9	1.8	1.8	2.4
	Reduce high fat content milk	6	1.2	1.2	3.6
	Reduce intake of food high in sodium	11	2.2	2.2	5.7
	All the above	478	94.3	94.3	100.0
	Total	507	100.0	100.0	

Possible correct

	Frequency	Percent	Valid Percent	Cumulative Percent
Vali 8.00 d	507	100.0	100.0	100.0

Correct responses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	1.0	1.0	1.0
	2.00	19	3.7	3.8	4.7
	3.00	59	11.6	11.7	16.4
	4.00	82	16.2	16.2	32.6
	5.00	124	24.5	24.5	57.1
	6.00	101	19.9	20.0	77.1
	7.00	77	15.2	15.2	92.3
	8.00	39	7.7	7.7	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

Percentage correct responses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	1	.2	.2	.2
	12.50	5	1.0	1.0	1.2
	25.00	19	3.7	3.7	4.9
	37.50	59	11.6	11.6	16.6
	50.00	82	16.2	16.2	32.7
	62.50	124	24.5	24.5	57.2
	75.00	101	19.9	19.9	77.1
	87.50	77	15.2	15.2	92.3
	100.00	39	7.7	7.7	100.0
	Total	507	100.0	100.0	

I am interested in healthy nutrition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	9	1.8	1.8	1.8
	2.00	19	3.7	3.8	5.5
	3.00	66	13.0	13.0	18.6
	4.00	211	41.6	41.7	60.3
	5.00	201	39.6	39.7	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

I often apply nutrition knowledge when purchasing fast food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	24	4.7	4.7	4.7
	2.00	89	17.6	17.6	22.3
	3.00	89	17.6	17.6	39.9
	4.00	160	31.6	31.6	71.5
	5.00	144	28.4	28.5	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

I am not knowledgeable about healthy eating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	203	40.0	40.1	40.1
	Disagree	177	34.9	35.0	75.1
	Neither agree nor disagree	55	10.8	10.9	86.0
	Agree	38	7.5	7.5	93.5
	Strongly agree	33	6.5	6.5	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

I am knowledgeable about fast food nutritional content

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	26	5.1	5.1	5.1
	Disagree	70	13.8	13.9	19.0
	Neither agree nor disagree	107	21.1	21.2	40.2
	Agree	186	36.7	36.8	77.0
	Strongly agree	116	22.9	23.0	100.0
	Total	505	99.6	100.0	
Missing	System	2	.4		
Total		507	100.0		

I don’t pay attention to the fast food products I buy and eat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	3.0	3.0	3.0
	Disagree	39	7.7	7.7	10.7
	Neither agree nor disagree	110	21.7	21.8	32.5
	Agree	211	41.6	41.8	74.3
	Strongly agree	130	25.6	25.7	100.0
	Total	505	99.6	100.0	
Missing	System	2	.4		
Total		507	100.0		

I often listen to fast food advertisements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	108	21.3	21.4	21.4
	Disagree	159	31.4	31.5	53.0
	Neither agree nor disagree	87	17.2	17.3	70.2
	Agree	124	24.5	24.6	94.8
	Strongly agree	26	5.1	5.2	100.0
	Total	504	99.4	100.0	
Missing	System	3	.6		
Total		507	100.0		

I am knowledgeable about fast food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	103	20.3	20.4	20.4
	Disagree	111	21.9	21.9	42.3
	Neither agree nor disagree	143	28.2	28.3	70.6
	Agree	110	21.7	21.7	92.3
	Strongly agree	39	7.7	7.7	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

I often consume fast food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	68	13.4	13.4	13.4
	Disagree	60	11.8	11.9	25.3
	Neither agree nor disagree	70	13.8	13.8	39.1
	Agree	225	44.4	44.5	83.6
	Strongly agree	83	16.4	16.4	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

Consuming fast food is pleasant and pleases me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	168	33.1	33.2	33.2
	Disagree	188	37.1	37.2	70.4
	Neither agree nor disagree	82	16.2	16.2	86.6
	Agree	53	10.5	10.5	97.0
	Strongly agree	15	3.0	3.0	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

I buy fast food despite knowing that it may not be healthy for me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	152	30.0	30.1	30.1
	Disagree	161	31.8	31.9	62.0
	Neither agree nor disagree	120	23.7	23.8	85.7
	Agree	56	11.0	11.1	96.8
	Strongly agree	16	3.2	3.2	100.0
	Total	505	99.6	100.0	
Missing	System	2	.4		
Total		507	100.0		

I am not influenced by fast food advertisements to buy fast food

.		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	44	8.7	8.7	8.7
	Disagree	79	15.6	15.7	24.4
	Neither agree nor disagree	90	17.8	17.9	42.3
	Agree	165	32.5	32.7	75.0
	Strongly agree	126	24.9	25.0	100.0
	Total	504	99.4	100.0	
Missing	System	3	.6		
Total		507	100.0		

Fast food advertisements influence me to consume fast food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	185	36.5	36.6	36.6
	Disagree	176	34.7	34.8	71.3
	Neither agree nor disagree	77	15.2	15.2	86.6
	Agree	57	11.2	11.3	97.8
	Strongly agree	11	2.2	2.2	100.0
	Total	506	99.8	100.0	
Missing	System	1	.2		
Total		507	100.0		

Lack of time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	29	5.7	5.7	5.7
	Disagree	39	7.7	7.7	13.4
	Neither agree nor disagree	39	7.7	7.7	21.1
	Agree	255	50.3	50.3	71.4
	Strongly agree	145	28.6	28.6	100.0
	Total	507	100.0	100.0	

Cost of healthy foods

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	104	20.5	20.6	20.6
	Disagree	147	29.0	29.1	49.7
	Neither agree nor disagree	81	16.0	16.0	65.7
	Agree	126	24.9	25.0	90.7
	Strongly agree	47	9.3	9.3	100.0
	Total	505	99.6	100.0	
Missing	System	2	.4		
Total		507	100.0		

I like fast food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	217	42.8	42.8	42.8
	Disagree	147	29.0	29.0	71.8
	Neither agree nor disagree	51	10.1	10.1	81.9
	Agree	76	15.0	15.0	96.8
	Strongly agree	16	3.2	3.2	100.0
	Total	507	100.0	100.0	

Easily accessible in my environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	143	28.2	28.2	28.2
	Disagree	118	23.3	23.3	51.5
	Neither agree nor disagree	87	17.2	17.2	68.6
	Agree	136	26.8	26.8	95.5
	Strongly agree	23	4.5	4.5	100.0
	Total	507	100.0	100.0	

Eating habits

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	68	13.4	13.4	13.4
	Disagree	90	17.8	17.8	31.2
	Neither agree nor disagree	137	27.0	27.0	58.2
	Agree	175	34.5	34.5	92.7
	Strongly agree	37	7.3	7.3	100.0
	Total	507	100.0	100.0	

Busy lifestyle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	38	7.5	7.5	7.5
	Disagree	46	9.1	9.1	16.6
	Neither agree nor disagree	67	13.2	13.2	29.8
	Agree	267	52.7	52.7	82.4
	Strongly agree	89	17.6	17.6	100.0
	Total	507	100.0	100.0	

Limited availability of healthy food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	122	24.1	24.1	24.1
	Disagree	166	32.7	32.7	56.8
	Neither agree nor disagree	115	22.7	22.7	79.5
	Agree	90	17.8	17.8	97.2
	Strongly agree	14	2.8	2.8	100.0
	Total	507	100.0	100.0	

Lack of cooking skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	60	11.8	11.8	11.8
	Disagree	69	13.6	13.6	25.4
	Neither agree nor disagree	73	14.4	14.4	39.8
	Agree	238	46.9	46.9	86.8
	Strongly agree	67	13.2	13.2	100.0
	Total	507	100.0	100.0	

Lack of will power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	182	35.9	35.9	35.9
	Disagree	155	30.6	30.6	66.5
	Neither agree nor disagree	75	14.8	14.8	81.3
	Agree	77	15.2	15.2	96.4
	Strongly agree	18	3.6	3.6	100.0
	Total	507	100.0	100.0	

How would you describe your current diet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Very poor	9	1.8	1.8	2.0
	Poor	52	10.3	10.3	12.2
	Fair	176	34.7	34.7	46.9
	Good	215	42.4	42.4	89.3
	Very good	54	10.7	10.7	100.0
	Total	507	100.0	100.0	

How would you describe your health

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Very poor	2	.4	.4	.6
	Poor	18	3.6	3.6	4.1
	Fair	96	18.9	18.9	23.1
	Good	266	52.5	52.5	75.5
	Very good	123	24.3	24.3	99.8
	e b	1	.2	.2	100.0
	Total	507	100.0	100.0	

How often do you eat a homemade meal

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Rarely or never	13	2.6	2.6	2.8
	1-3 x a month b	33	6.5	6.5	9.3
	1 – 3 x a week	127	25.0	25.0	34.3
	4 – 6 times a week	206	40.6	40.6	75.0
	Everyday	127	25.0	25.0	100.0
	Total	507	100.0	100.0	

How would you rate your cooking skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Non existent	12	2.4	2.4	2.6
	Existent	60	11.8	11.8	14.4
	Average	139	27.4	27.4	41.8
	Good	228	45.0	45.0	86.8
	Excellent	67	13.2	13.2	100.0
	Total	507	100.0	100.0	

Where have you learned the most about nutrition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	.4	.4	.4
	Family	132	26.0	26.0	26.4
	Friends	18	3.6	3.6	30.0
	School	246	48.5	48.5	78.5
	Media	88	17.4	17.4	95.9
	Work	21	4.1	4.1	100.0
	Total	507	100.0	100.0	

How often do you consume fast foods

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Rarely or never	84	16.6	16.6	16.8
	1-3 x a month b	189	37.3	37.3	54.0
	1 – 3 x a week	200	39.4	39.4	93.5
	4 – 6 times a week	33	6.5	6.5	100.0
	Total	507	100.0	100.0	

At which meal time do you eat fast food the most

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Breakfast	27	5.3	5.3	5.5
	Morning snack	3	.6	.6	6.1
	Lunch	199	39.3	39.3	45.4
	Afternoon snack	35	6.9	6.9	52.3
	Dinner	206	40.6	40.6	92.9
	After dinner snack	36	7.1	7.1	100.0
	Total	507	100.0	100.0	

How often do you listen to fast food advertisements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Rarely or never	239	47.1	47.1	47.3
	1-3 x a month b	84	16.6	16.6	63.9
	1 – 3 x a week	100	19.7	19.7	83.6
	4 – 6 times a week	37	7.3	7.3	90.9
	Every day	46	9.1	9.1	100.0
	Total	507	100.0	100.0	

How do you perceive your body weight

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	I am overweight a	73	14.4	14.4	14.6
	I am normal weight , but gaining weight	94	18.5	18.5	33.1
	I am normal weight	311	61.3	61.3	94.5
	I am underweight	28	5.5	5.5	100.0
	Total	507	100.0	100.0	

Are you male or female

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Male	146	28.8	28.8	29.0
	Female	358	70.6	70.6	99.6
	Other	1	.2	.2	99.8
		1	.2	.2	100.0
	Total	507	100.0	100.0	

How old are you

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	Under 20 years old	125	24.7	24.7	24.9
	20 – 25 years old	300	59.2	59.2	84.0
	26 – 30 years old	44	8.7	8.7	92.7
	31 – 40 years old	24	4.7	4.7	97.4
	41 and above	13	2.6	2.6	100.0
	Total	507	100.0	100.0	

What level of education do you have

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.2	.2	.2
	High School	58	11.4	11.4	11.6
	Freshman/ Sophomore at University	98	19.3	19.3	31.0
	Junior/ Senior at University	278	54.8	54.8	85.8
	Graduate Education	72	14.2	14.2	100.0
	Total	507	100.0	100.0	