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Factors influencing Iranian consumers' attitudes toward fast-food consumption

Abstract

Purpose: Eating patterns around the world have changed considerably, including food choices and preparation. One of these alterations in food consumption patterns is an increase in desire for fast-food consumption, which has been associated with poor diet quality. In order to analyze consumers' food consumption behaviors, it is necessary to account for psychological factors (e.g., attitudes) that shape behaviors. Thus, the purpose of this study was to explore influencing factors on the attitudes of consumers in Isfahan City towards fast-food consumption, so as to understand why consumers use fast-food despite widespread knowledge of the negative health consequences.

Methodology: The predominant paradigm of the present study was quantitative, in that it was a correlational survey. The population of this study consisted of consumers who lived in Isfahan city in June 2015. A total sample of 350 people were selected using convenience sampling. Data was collected through a face-to-face interview with the consumers using a researcher-made questionnaire. Analysis was conducted using SPSS (V20) and AMOS (V20) software and a set of correlation and differential tests.

Findings: The results revealed that 'health consciousness' and 'trust' are the main effective factors on the attitudes of the respondents. Results also revealed that the elder and married respondents have more positive attitudes towards fast-food consumption.

Originality/value: It is worth mentioning that fast-food has become an important part of the Iranian diet. These findings have both academic and policy implications. The results showed that the need for much more consumer education regarding fast-food, and mass-media could effectively be used. Further, the government should support and subsidize fast-food restaurants so that they may produce healthier food options.

Keywords: Convenience food, Isfahan, CFA, Attitude

Paper type: Research paper

Introduction

Eating patterns worldwide have changed completely, including food choices and preparation (Drewnowski & Specter, 2004). One of these alterations in food consumption patterns is an increase in desire for fast-food consumption (Holmboe-Ottesen, 2000). Fast-food has been defined as a “general term used for a limited menu of foods that lend themselves to production-line techniques; suppliers tend to specialize in products such as pizzas, hamburgers, chicken, or sandwiches” (Cimadon, Geremia, & Pellanda, 2010). Western fast-food tends to be energy-dense and nutrient poor, which can undermine appetite regulation and may lead to ‘passive over-consumption’ (Whitton, Ma, Bastian, Chan, & Chew, 2014). This increase in consumption of food-away-from-home may have a profound impact on consumers’ health (E. Kim, Ham, Yang, & Choi, 2013).

A causal link between obesity and the fast-food industry has yet to be proven (Anderson & Miroso, 2014), yet it presents negative impacts on health (Drewnowski & Specter, 2004). Some studies show that because of high glycemic index, excessive amount of fat saturated fat, sugar, and salt, (Azizi, 2012; Esmailzadeh, 2012; Goyal & Singh, 2007; Jill Davies & Smith, 2004), fast-food consumption can cause serious problems. For example, both obesity and cardiovascular disease are growing issues in today’s world, and is associated with the consumption of fast-food (Davis & Carpenter, 2009; Dority, McGarvey, & Kennedy, 2010; Frank, 2012; D. M. Kim, Ahn, & Nam, 2005; Okrainec, Banerjee, & Eisenberg, 2004).

Food is an integral part of life (Kashif, Awang, Walsh, & Altaf, 2015), and fast-food consumption has been associated with poorer diet quality (Whitton et al., 2014). An expert panel of the World Cancer Research Fund and American Institute for Cancer Research recommend minimal fast-food consumption because of the possible association between fast-food intake and weight gain (Marmot et al., 2007). Healthy People 2010 also recommends a decrease in the consumption of fast-foods that are energy-dense, high-sugar/high-fat foods, with the goal of decreasing the prevalence of overweight and obesity in the United States (Dave, An, Jeffery, & Ahluwalia, 2009). Why, with the obvious negative impacts, do consumers continue to partake of fast-food?

Consumer decisions are based on some level of rationality; nevertheless, their emotions play a central role in the development of an attitude towards food consumption (Kashif et al., 2015). Senauer (2001) proposed that to accurately analyze consumers’ food consumption behaviors it is necessary to account for psychological factors (e.g., attitudes, perceptions) that shape preferences and behaviors (Jun, Kang, & Arendt, 2014). It is widely

acknowledged that consumer decisions are derived from a complex process. Ones' knowledge, beliefs, attitudes and behavior are formed interdependently (Ghanian *et al.*, 2015), and attitudes are likely to influence fast-food consumption. Relatedly, a positive association between attitudes toward fast-food and frequency of fast-food intake has been found (Dave et al., 2009). Therefore, a greater understanding of consumers' attitudes about fast-food may help to inform public health efforts aimed at improving dietary practices. Other studies show that convenience (Driskell, Meckna, & Scales, 2006; Steptoe, Pollard, & Wardle, 1995), fast purchase, availability, palatability (Rydell *et al.*, 2008), ethical value, nutritional value, brand value, food quality (Schröder & McEachern, 2005), taste, flavor, cultural and social factors (Bryant & Dundes, 2008; Cheang, 2002; Prescott, Young, O'Neill, Yau, & Stevens, 2002), cost, quick and menu choices (Bowman & Vinyard, 2004; Driskell et al., 2006; Steptoe et al., 1995) can influence fast-food purchasing, encouraging consumers to purchase and eat fast-food.

However, the fast-food industry's immense resources is a dominant supply chain position (Anderson & Miroso, 2014). International data suggest that the proportion of fast-food consumers may vary in different segments of the population. In the USA, Australia and Spain fast-food consumption is highest among younger age groups. It has also been shown to be more prevalent in higher-income groups in the USA, Australia and South Africa (Whitton et al., 2014). Fast-food consumption is growing in many developing countries, and a large part of the market has been assigned to fast-food (Cimadon et al., 2010; Dave et al., 2009). In Iran, fast-food consumption and fast-food restaurants are becoming developed (Sadrazadeh Yeganeh *et al.*, 2007). In Iran, 51% of children consume fast-food snacks and carbonated drinks at least once a week (Karimi Shahanjarini, Shojaezadeh, Majdzadeh, Rashidian, & Omidvar, 2009). One study indicated that students aged 11-18 years were consuming about 2 fast-food meals per week in Isfahan, Iran (Faghih & Anoshe, 2008). The most prevalent foods purchased by children and teenagers (11 to 18 years) at fast-food restaurants included cheeseburgers, French fries, and pizza (Yarmohammadi et al., 2015). According to the Statistical Center of Iran (2017), approximately 50.8% of people aged 18 and over have consumed at least one carbonated drink per week. Meanwhile, 47.4% of 18-year-olds and more reported having consumed fast-food in the month before the survey. Among them, 18.7 percent one time a month and 2.6 percent more than five times a month consumed fast-food. Also, in Iran, 30% of adults eat 3 times or more in a week of sandwiches (Dehdari & Mergen, 2012).

According to the last report of the central bank of Iran in 2014, Iranian people spend about 366 million dollars for fast-food consumption yearly (financial tribune, 2015). These statistics showed the high amount of fast-food consumption in Iran, despite the facts that traditionally, Iranians prefer to have home-cooked meals, and fast-food operations have a comparatively expensive menu. Further, the rates of cardiovascular issues and obesity are increasing while fast-food intake has increased (Kelishadi *et al.*, 2005); 38% of mortality rates in Iran are related to cardiovascular issues.

Isfahan is one the largest cities in Iran, with ancient history, culture and several traditional foods. Sharifirad, Yarmohammadi, Azadbakht, Morowatisharifabad, & Hassanzadeh (2013), studied fast-food consumption among students in Isfahan, and signified high consumption of fast-food in this age. Additionally, Akbari & Azadbakht (2014) conducted a study among youth in Isfahan and found a pattern of unhealthy food consumption, recommending a need for more attention. Rouhani, Mirseifinezhad, Omrani, Esmailzadeh, & Azadbakht (2012), studied the fast-food consumption and quality of diet among Isfahanian adolescent girls, and demonstrated a high intake of fast-food was connected to participants being overweight.

As mentioned before, affecting factors on fast-food consumption in Isfahan were evaluated in several studies. However, these studies were conducted to explore a specific age group, with no such studies assessing the influencing factors on consumers as a whole. Understanding the patterns of fast-food consumer behavior should thus enable educators and policy makers to help overcome potential vulnerabilities (Wright, Friestad, & Boush, 2005). Thus, the purpose of this study is to explore influencing factors on the attitudes of consumers in Isfahan City towards fast-food consumption, so as to understand the continued consumption of fast-food despite widespread knowledge of the negative health consequences.

This study provides a more nuanced view of consumer attitudes towards fast-food consumption in Iran and in Isfahan city, and is a seminal investigation of influencing factors on the attitude of consumers in middle-east countries. Thus, this research may open a pathway in this area of study. Additionally, the variables and methods used in this study permit the drawing of more credible and generalizable conclusions, as compared to previous studies, and indeed, studies in this region.

1.1 Research framework

Consumer behavior originates from his or her feelings, encouraging factors and attitudes (Alvensleben, Padberg, Ritson, & Albisu, 1997). Attitude plays an important role in forming

the behavior of the consumer, and can be defined as a part of consumers' behavior (Ajzen & Fishbein, 1980). In fact, a consumer evaluates or judges a product based on his or her attitudes (Steenkamp & Van Trijp, 1989). Attitudes are created by evaluating something, which can be good or bad (Alam & Iqbal, 2007). Vänninen, Siipi, Keskitalo, and Erkkilä (2009) defined an attitude as "favorable or unfavorable disposition susceptible to transient influences...a complex mental state involving beliefs, feelings, values and dispositions to act in certain ways" (p. 107). The reason some people support particular social policies or ideologies while others oppose them can be explained by attitude (Ghanian *et al.*, 2015). In this regards, many researchers have attempted to define affecting factors on consumers' attitudes. In one such example, Akbay, Tiryaki, and Gul (2007) found that the attitudes of the consumers towards the price of fast-food have an effect on their level of fast-food consumption. Law, Hui, and Zhao (2004) found other factors influencing consumers' attitudes towards fast-food consumption, such as the amount of importance they place on health. Mattsson and Helmersson (2007) concluded that Swedish high school students generally have information about all aspects of fast-food, meaning that they possess awareness of the negative side effects of fast-food, and accordingly pay more attention to nutritional and health concerns than price, speed, and convenience. Jahan *et al.* (2014) conducted a study among Pakistan consumers, showing that frequent fast-food consumption can be influenced via health consciousness of fast-food. Others have studied the relationship between subjective norm and rate of fast-food consumption, concluding that subjective norms is one of the important factors that affect fast-food intake (Astrom & Rise, 2001; Bissonnette & Contento, 2001; Seo, Lee, & Nam, 2011). Jekanowski, Binkley, and Eales (2001) found that fast-food demand depends on its availability.

A review of the literature exhibits that attitude plays an important role in the level of fast-food consumption, thus, a focus on attitude is a beneficial lens through which to examine the phenomenon of fast-food consumption. Therefore, this study sought to select comprehensive affective factors on fast-food consumption and assess their effects on consumers in Isfahan city, while using "availability", "health consciousness", "trust" and "subjective norms" to analyze the attitudes of consumers towards fast-food consumption was applied.

1.2 Research hypothesis

According to the research framework, the following hypotheses were constructed for this study:

H1: The more availability of fast-food, the more the consumers will have a positive attitude towards its consumption.

H2: The more the health consciousness of the consumer, the more they will have a negative attitude towards fast-food consumption.

H3: The more the consumers trust in individuals and agencies involved in creating fast-food products, the more they will have a positive attitude towards it.

H4: The attitudes of consumers towards fast-food consumption can be affected by its perceived subjective norms.

2. Research Method

2.1. Participants

A correlational survey approach was conducted to test the hypotheses developed in this study and to determine consumers' attitudes toward fast-food consumption. The population of this study consisted of consumers who lived in Isfahan city in June 2015. Isfahan city is the capital of Isfahan province, located in the center of Iran. Isfahan, the third most populated city in Iran after Tehran and Mashhad, is an important historical area in the domestic and international world.

A sample of 350 consumers was selected using a convenience sampling method. The data was collected face-to-face with participants. Data collection was conducted during different times of day and on different days of the week and weekend, so as to minimize periodicity and non-coverage problems (Pappu & Quester, 2008). Attempts were made to collect data from participants living in the North, South, East and West sections of the city. No incentives were provided. All responses were checked to ensure they were complete. A total of 30 participant responses were deemed incomplete, and thus not included in the study.

2.2. Materials/Procedures

Data for this study was collected using a researcher-made questionnaire, which was tested for validity prior to the launch of the study. Specifically, the questionnaire was reviewed by subject experts, who evaluated the interpretation of the questions, the length of the questionnaire, easiness of the questions, and clarity. It should be noted that because the respondents of the present study were pedestrians crossing in different parts of the city, it was important to make the questionnaire as short as possible. Next, in order to assess the reliability of the questionnaire, a pilot study was conducted in Ahvaz city (another populous city of Iran). After collecting 30 pilot questionnaires, the Cronbach's alpha coefficient was

calculated, showing coefficients that exceeded acceptable rates for all the scales used in the study. Results of Cronbach's alpha and the research questions are shown in Table 1.

The research instrument was a fixed-response questionnaire consisting of two main parts. The first part contained demographic items, including age, marital status, gender, education, and employment status. Five perceptual factors were constructed in the second part of the questionnaire, and were as follows:

Subjective norms: A subjective norm corresponds to an individual's perception of social pressure; it is an individual's perception of societal pressure to perform (or resist) a certain behavior (Costa-Font and Gil, 2009). In context, individuals will seek to engage in behavior or actions when they think they "should", as they perceive these behaviors or actions to be important to others (Costa-Font & Gil, 2009). In other words, subjective norms are evaluated by normative ideas and stimulant to follow (Ajzen, 1991). It can be determined by questions about how much respondents comply with opinions of people. Previous studies have found a positive correlation between subjective norms and rates of fast-food consumption (Hewitt & Stephens, 2007; K. W. Kim & Shin, 2003). Accordingly, this factor was assessed in this study using 2 scale items: "My family believes that our diet should involve fast-food" and "My friends recommend that I buy fast-food". Participants rated their agreement to each item on a five-point scale (ranging from "1: fully disagree" to "5: fully agree").

Health consciousness: Health consciousness is health/nutrition awareness and knowledge which refers to the degree of readiness to undertake health actions (Becker & Maiman, 1975) that influence health attitudes and behaviors (Iversen & Kraft, 2006). As mentioned previously, health consciousness has a prominent effect on consumers' attitudes (Jahan *et al.*, 2014). Therefore, this factor was assessed in this study using 4 scale items, including: "I do not want to eat fast-food because it has high calories", "I do not want to eat fast-food as its consumption causes an imbalance in weight," and "I do not want to use fast-food as it can be one of the reasons for high cholesterol". Participants rated their agreement to each item on a five-point scale (ranging from "1: fully disagree" to "5: fully agree").

Availability: According to Webster dictionary, availability can be defined as "the quality of being present or ready for immediate use". According to the definition and study of Jekanowski *et al.* (2001), the availability of fast-food can have a positive correlation to its consumption. Given this fact, this factor was assessed in this study using 2 scale items: "I tend to consume fast-food because its marketplace is very accessible" and "I tend to consume

fast-food because of its convenience characteristics and I can obtain it near my workplace”. Participants rated their agreement to each item on a five-point scale (ranging from “1: fully disagree” to “5: fully agree”).

Trust: “Social trust” refers to people’s willingness to rely on experts and institutions in the management of risks and technologies” (Chen & Li, 2007). There is not detailed knowledge among people regarding fast-foods, and they therefore rely on social trust to cope with this lack of knowledge and to reduce the complexity they are faced with. As such, this factor was assessed in this study using 3 scale items, including: “When I am purchasing food, I pay attention to its label for safety assurance” and “I trust in the observation of sanitary practices in the preparing of fast-food.” Participants rated their agreement to each item on a five-point scale (ranging from “1: fully disagree” to “5: fully agree”).

Attitudes: Evaluative favorable or unfavorable statements, concerning any object, people, or events is demonstrative of attitude (Tabassum & Rahman, 2012). A more elaborate definition of attitude is, “an attitude is an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of our environment” (Alam & Iqbal, 2007). Buying behavior can be influenced by attitude towards a product or service, and a purchase is the result of favorable attitude (Azam, 2005). Thus, specific attitudes may explain why an individual embraces certain social policies or ideologies, as opposed to others (Ghanian *et al.*, 2015). This factor was assessed in this study using 5 scale items, such as “Fast-food products have the potential for carcinogens”, “Fast-food products are attractive,” and “The nutritional values of fast-food equal that of domestic foods”. Participants rated their agreement to each item on a five-point scale (ranging from “1: fully disagree” to “5: fully agree”).

3. Results

Data was analyzed using SPSS (version 20) and AMOS (version 20). The data was initially analyzed by SPSS to produce descriptive statistics and the frequency for all variables. With a confirmatory factor analysis (CFA), the accuracy of measurement model was tested. Finally, correlation and regression analysis were applied to determine which constructs were capable for predicting the attitudes of consumers towards fast-food. Results are described forthcoming.

The population of this study consisted of consumers who lived in Isfahan in June 2015. The demographic attributes of the respondents are provided in Table 2.

As seen in Table 2, the study sample included 183 men (55.5%) and 147 women (44.5%). The mean age of respondents was 31.36 years, and 41.5% of held bachelor degrees. More than half of the respondents were married (55.8%), which aligns with the population of city as a whole. About one-fourth of the respondents were student (25.2%), which was to be expected, considering that 5 large and several small universities are located in the Isfahan city.

A confirmatory measurement model was tested by AMOS software (V20). The use of CFA was to ensure the unidimensionality of the scales measuring each construct. Confirmatory Factor Analysis (CFA) was employed to examine whether measures of a construct were consistent with the nature of that construct or not (cited in: Hall, 2008). As shown in Table 3, several commonly-used fit indices were employed to assess the overall model fit (Hu & Bentler, 1999). The comprehensive goodness-of-fit indices produced a Chi square of 133.26, and Chi square/DF=2.665 (Schreiber, Nora, Stage, Barlow, & King, 2006), The comparative fit index (CFI) value of 0.93, incremental fit index (IFI) value of 0.93 and Tucker-Lewis index (TLI) value of 0.90, were deemed good fits to the model according to (Hu & Bentler, 1999), who stated that for these indices a value of 0.7 and above is satisfactory, 0.8 and above is good, and 0.9 and above is very good. The root mean square error of approximation (RMSEA) value was 0.07, where a RMSEA threshold in the range of 0.05 to 0.10 is considered an indication of fair fit (MacCallum *et al.*, 1996, as cited in (Hooper, Coughlan, & Mullen, 2008)). Thus, the results of the measurement model indicate an acceptable fit.

All standardized factor loadings should be at least 0.5 and statistically significant. Loadings of this size indicate that observed indicators are strongly related to their associated constructs. It also contributes to construct validity (Hair, Anderson, Babin, & Black, 2010). In the model, all standardized factor loadings are significant. Most factor loadings are above 0.5, except some values at marginal levels (as seen in Table 4). Taken together, the findings indicate that there was a satisfactory fit between the proposed model and the data. Additionally, convergent and discriminant validity was established for all constructs. As it can be seen in Table 4, composite reliability for all constructs met the threshold of 0.7, which was suggested by Hair *et al.*, (2010). Average Variance Extracted (AVE) for all constructs was greater than the threshold of 0.5 (Hair *et al.*, 2010). Based on the suggestion of Hair *et al.*, (2010), discriminant validity statistics, i.e. MSV (Maximum Shared Variance) and ASV (Average Shared Squared Variance), should be less than AVE. As it can be seen in Table 4, all four constructs had good discriminant validity. Finally, the values of Skewness and Kurtosis

did not identify any serious violations of normality, as all the coefficients were below ± 2 (as seen in Table 1).

In order to explore the association between the attitudes of the respondents towards fast-food and influencing factors (i.e. availability, health consciousness, trust and subjective norms), Pearson correlation coefficients were estimated (Table 5). As shown in Table 5, there was a significant and positive correlation between all constructs and attitudes towards fast-food.

A multiple regression analysis was conducted to evaluate how well measures of 'availability', 'health consciousness', 'trust', and 'subjective norms' predicted attitude towards fast-food. The stepwise method was chosen because it enters the predictor constructs into the equation model until the addition of further constructs produce no significant improvement in multiple correlation coefficient.

Table 6 shows the results of the regression analysis. To predict the goodness of fit of the regression model, the multiple correlation coefficient (R), coefficient of determination (R^2), and F ratio were examined. The linear combination of the two constructs was significantly related to the attitudes towards fast-food, $R^2=0.31$, $F = 74.33$, $p= 0.0001$. Only two out of four predictor constructs of attitudes towards fast-food, namely 'trust' and 'health consciousness,' entered into the equation. The other two constructs did not enter the multiple regression equation because they did not contribute to the multiple correlation co-efficient. The multiple correlation co-efficient was 0.55, indicating that approximately 0.31 per cent of the variance (R^2) in the attitudes towards fast-food can be explained by the three predictor constructs taken together. In the regression analysis, the beta coefficients or standardized coefficient can be used to explain the relative importance of the three predictor constructs in contributing to the variance in the attitudes towards fast-food. Assuming that other predictor constructs are held constant, looking at the standardized beta weights it can be seen that 'health consciousness' (Beta = 0.39, $p = 0.0001$) carried the heaviest weight, followed by 'trust' (Beta = 0.28, $p = 0.0001$). The other two predictor constructs, which were excluded from the model, appear not to be statistically significant in affecting the attitude of the respondents towards fast-food.

Based on the non-standardized coefficients the regression equation obtained as follow:

$$Y = 6.17 + 0.14X_1 + 0.28X_2$$

Y: Attitudes towards fast-food

X₁: Health consciousness

X₂: Trust

4. Discussion and Conclusion

Fast-food consumption is one of the manifestations of poor eating patterns. According to the literature review, attitude towards fast-food consumption is one of the main affecting factors in fast-food consumption behavior. Therefore, this study was conducted to investigate the main affecting factors on attitudes of consumers towards fast-food in Isfahan city, Iran. The results of this study revealed that subjective norms have no influence on the attitudes of the respondents towards fast-food consumption. This result contradicts the findings of Sharifirad et al. (2013), who conducted research in Isfahan among high school students in 2011, which suggested that subjective norms have an indirect effect on fast-food consumption, as well as those of Stok *et al.* (2015), which found that predicting eating behavior can be accomplished by subjective norm measurement. The results of this study lead to the conclusion that consumers do not, in fact, rely on their subjective norms when evaluating fast-food consumption. Consumers, instead, rely more on trust and health consciousness. Thus, consumers seek out what they believe to be trustworthy fast-food restaurants that they trust will not result in foodborne illness.

Being that fast-food consumption was also be linked with health consciousness, awareness of the nutritional aspects of the food is important for Isfahanian consumers, and affect their attitudes towards fast-food consumption. This finding is consistent with (Musaiger, 2014), who reported that although consumers considered fast-food harmful to their health, they continued to eat fast-food. In this regards, (Azzurra & Paola, 2009) showed that health consciousness has an effect on the attitudes towards not using functional foods. In this regards, Jun et al. (2014) found that health values and awareness affect attitudes towards a healthy menu, which is in line with the present study. This finding indicates that health information on fast-food affects consumption. Yet, the current education alone is not sufficient. Instead, there may be potential in the use of mass media to expand the dissemination of information, so as to mitigate the negative impacts of widespread fast-food consumption.

Results also showed that availability of fast-food does not affect consumer's attitudes towards fast-food consumption. This results conflicts with that of previous studies in the U.S.

(Dunn, Sharkey, & Horel, 2012; Oexle, Barnes, Blake, Bell, & Liese, 2015), and in Australia (Plater & Egger, 2010), which found that greater availability of fast-food was positively correlated to higher fast-food consumption, and the associated negative health impacts. This result, is in line with other results of present study. The consumers tried to find trustable fast-food restaurants and they will come from all over the city. Therefore it is rational that the availability of the fast-food restaurants was not an effective factor in this study.

The results of this study showed that, followed by health consciousness, trust influenced the attitude of the consumers towards fast-food consumption. This finding aligns with Baharvand, RezaeiDarjazini, and Feyzi (2015), who found a strong, positive relationship between trust and fast-food loyalty among fast-food customers in Tehran, Iran.

Fast-food has become a major part of the Iranian diet. Although more research needs to be conducted, specifically in regards to the effect of attitudes toward fast-food and fast-food intake, this study provides preliminary evidence for the association, especially in Isfahan city.

This study has both academic and managerial implications. From an academic perspective, this study showed the affecting factors on the attitudes of consumers towards fast-food consumption, and revealed that trust and health consciousness are the most influential factors. Further research should be conducted to elucidate the potential associations of fast-food consumption with attitudinal and psychosocial aspects. These findings also have important policy implications. The results showed the need for much more consumer education regarding safe food. It was evident that mass-media, such as TV and radio, are important for sharing the knowledge of health issues regarding the fast-food consumption with consumers. Media should be used effectively. Although television and other mass media have a wider reach, government publications are more trusted by the consumers, and can be used more effectively in educating consumers. If individuals insist on eating fast-food, then it may be important to target efforts to increase the proportion of fast-food restaurants offering healthier food options; this may involve governmental support and subsidies. Further, they should enforce that fast-food restaurants label menu items with nutritional facts of their products, including fat content, calories, carcinogen components, etc.

4.1 Limitation and Future research

The present study is not without limitations, but in turn offers opportunity for future studies. The results of this study must be acknowledged as the outcome of a case study of one city. Further extensions to other regions are needed to be studied separately before generalizations can be made. The results of this study opened a way for assessing the

attitudes of consumers towards fast-food consumption. Future investigation should expand data collection to all regions of the country, so that more data can be obtained and evaluated to determine the country's attitude towards fast-food consumption. Further, it would be of value in future research to consider the effect of other factors on the attitudes of the consumers, such as "perceived behavior control, perceived benefits, perceived risks, budget, and convenience". Consumers demographics might also have a different effect on their attitudes towards fast-food consumption, which should be investigated in the future studies. Moreover, frequency of fast-food consumption should be considered in the future studies.

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Table 1. The questions included in the study questionnaire and the Cronbach's alpha for the main scales of the study

Construct	Alpha's coefficients	Code ¹	Questions	Mean	SD	Skewness	Kurtosis
Availability	0.71	AV1	I tend to consume fast-food because its marketplace is very accessible.	2.70	1.25	0.70	0.55
		AV2	I tend to consume fast-food because of its convenience characteristics and I can obtain it near my workplace.	2.54	1.28	0.90	0.36
Health consciousness	0.68	HC1*	I do not want to eat fast-food because it has high calories.	3.44	1.56	0.44	1.34
		HC2*	I do not want to eat fast-food as its consumption causes an imbalance in weight.	3.87	1.29	1.10	0.09
		HC3*	I do not want to eat fast-food as it can be one of the reasons for high cholesterol.	4.027	1.14	1.37	1.27
Attitudes	0.67	HC4*	I do not want to eat fast-food because it has a lot of preservatives.	4.07	1.18	1.30	0.84
		AT1*	Fast-food products have the potential for carcinogens.	4.30	0.88	1.54	1.62
		AT2	Fast-food products are attractive.	3.89	0.90	1.19	1.71
		AT3	The nutritional values of fast-food equal that of domestic foods.	1.99	1.11	1.27	0.89
Subjective norms	0.60	SN1	My family believes that our diet should involve fast-food.	3.55	1.30	0.73	0.69
		SN2	My friends recommend that I buy fast-food.	3.23	1.20	0.18	0.77
Trust	0.65	T1	When I am purchasing food, I pay attention to its label for safety assurance.	1.71	1.07	1.75	1.56
		T2	I trust in the observation of sanitary practices in the preparing of fast-food.	3.51	1.19	0.69	0.35

* Reverse items.

¹ Here after we use these codes for showing each questions.

Table 2. Demographic attributes of the respondents

Demographic attributes	Category	Frequency	Percent
Gender	Male	183	55.5
	Female	147	44.5
Marital status	Single	146	44.2
	Married	184	55.8
Education	High school	43	13.0
	Diploma	94	28.5
	B.Sc.	137	41.5
	M.Sc.	46	13.9
	Ph.D.	10	3.0
Employment status	Student	83	25.2
	Housekeeper	57	17.3
	Governmental employed	76	23.0
	Non-governmental employed	71	21.5
	Retired	9	2.70
	Unemployed	34	10.3
Age	Mean	St.D.	Min-Max
	31.36	10.26	12-68

Table 3. Measures of the research framework model fit

Items	Chi square	Chi square/DF	IFI	TLI	CFI	RMSEA
Indices	133.26	2.665	0.938	0.901	0.937	0.07

CFI: Comparative Fit Index

IFI: Incremental Fit Index

TLI: Tucker-Lewis Index

CFI: Comparative Fit Index

RMSEA: Root Mean Square Error of Approximation

Table 4. Factor loadings and convergent and discriminant validity in Confirmatory Factor Analysis

	Availability	Health consciousness	Attitudes	Subjective norms	Trust
AV1	0.819 ^a				
AV2	0.661**				
HC1		0.56 ^a			
HC2		0.72**			
HC3		0.79**			
HC4		0.82**			
AT1			0.73 ^a		
AT2			0.71**		
AT3			0.69**		
SN1				0.72 ^a	
SN2				0.75**	
T1					0.75 ^a
T2					0.72**
CR	0.71	0.82	0.75	0.70	0.70
AVE	0.55	0.54	0.50	0.54	0.54
MSV	0.23	0.23	0.14	0.19	0.14
ASV	0.12	0.14	0.07	0.13	0.11

a Values were not calculated because loadings were set to 1.0 to control construct variance

** Significant at 1%

Table 5. Association between "attitudes towards fast-food" and "influencing factors"
(Pearson correlation)

	Availability	Health consciousness	Trust	Subjective norms	Attitude
Availability	1				
Health consciousness	0.43**	1			
Trust	0.13*	0.32**	1		
Subjective norms	0.42**	0.46**	0.32**	1	
Attitude	0.10*	0.38**	0.42**	0.28**	1

* $P \leq 0.05$

** $P \leq 0.01$

Table 6. Multiple regression analysis of attitudes towards fast-food consumption

Constructs	R	R ²	B	Beta	t statistic	Sig	f statistic	Sig
Constant	-	-	6.17	-	12.59	0.0001**		
Health consciousness	0.490 ^a	0.241	0.149	0.393	8.05	0.0001**	74.33	0.0001**
Trust	0.559 ^b	0.313	0.288	0.286	5.85	0.0001**		

** $P \leq 0.01$

a: Predictors: (Constant), health consciousness

b: Predictors: (Constant), health consciousness, trust,