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The Effects of Health Value on Healthful Food Selection Intention at Restaurants: Considering the Role of Attitudes Toward Taste and Healthfulness of Healthful Foods

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Keywords

value-attitude-behavior model, health value, healthful food, casual dining restaurants

Disciplines

Business Administration, Management, and Operations | Food and Beverage Management | Marketing

Comments

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1. Introduction

While obesity rates have not increased over the past decade in the United States, 35% of adults are still classified as obese (Ogden et al., 2014). Because obesity has been attributed, in part, to people's frequent eating out, restaurants have become a potential target for obesity prevention efforts (Ma et al., 2003; McCrory et al., 1999). Factors shown to positively affect consumer's restaurant food choices include: nutrition knowledge (Dickson-Spillmann and Siegrist, 2011); availability of healthful menu options (Longacre et al., 2012; Story et al., 2008); prices of healthful menu items (Horgen and Brownell, 2002; Wall et al., 2006); and consumer's eating habits (de Bruijn, 2010). In contrast, the effect of menu labeling on consumers selection of healthful foods has been inconsistent (Elbel et al., 2009; Harnack & French, 2008; Harnack et al., 2008; Yamamoto et al., 2005).

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. Although values as antecedents of attitudes are important (Rokeach, 1973), to date, they have received little attention. The value-attitude-behavior (VAB) model examines the effects of both values and attitudes on behavior and has been used to explain how an individual's perceived value affects actions through both direct and indirect influences of intervening attitudinal variables (Tudoran et al., 2009). Therefore, the primary purpose of this study was to apply the hierarchical VAB model to assess consumers' behavioral intentions related to healthful food selections at restaurants. More specifically, this study examined whether or not the value customers placed on health influenced their attitudes toward low-fat or low-calorie restaurant foods in terms of taste and healthfulness, and their behavioral intentions.

2. Literature Review

2.1 Theoretical framework

The VAB model consists of three factors: values, attitudes, and behaviors. Value has been defined many ways, however, the underlying concept is that a value is a desirable and fundamental standard which guides people's actions. Another component of the VAB model, attitude, is "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). Ajzen (1991) demonstrated, through the theory of planned behavior (TPB), that attitudes are significant in predicting behavioral intention. Although attitudes resemble values in that both are abstract social cognitions, values are more fundamental than attitudes, indicating the following hierarchical ordering: values → attitudes → behaviors (Rokeach, 1973).

Within the VAB framework, we hypothesized that health value affects healthy eating intentions. Because limited research has been done on the impacts of health value and intent to choose healthful menu items at restaurants, we chose the VAB model to examine this construct. The VAB model has been extensively applied to a variety of behavior domains including healthy eating behaviors.

2.2. Health values and healthful food consumption

Tudoran et al. (2009) defined health value as "the degree to which individuals value their health" (p. 570). People perceive health value differently (Lone et al., 2009; Tromp et al., 2007). For example, in Tromp et al.'s study (2007), participants who reported higher health value were more likely to stop smoking than those reporting lower health value. Value guides people's behaviors; therefore, because health values differ, health promoting behaviors also differ, such as selecting healthful foods.

Norman (1995) found a positive relationship between believing that performing health behaviors enhances health and actually carrying out health behaviors; this relationship was only found in the study group with high health value. Other researchers also demonstrated the positive roles of perceived health value in performing health-promoting behaviors (Gebhardt et al., 2001, Moorman and Matulich, 1993).

It is important to note that various terms have been used to convey concepts similar to health values including “health salience” (Fabrega and Roberts, 1972); “health consciousness” (Michaelidou and Hanssan, 2008); “health concerns” (Westcombe and Wardle, 1997); and “health involvement” (Olsen, 2003). Olsen (2003) employed the concept of “health involvement” and found positive effects of health involvement on fish consumption. Westcombe and Wardle (1997) studied the effects of diners’ health concern on their willingness to consume healthful foods and found that participants with more concerns about their health were less likely to be affected by taste when making food selections. Researchers have found that health concerns and health consciousness affect attitudes toward healthy eating and food selection (Hoefkens, 2011; Krystallis et al., 2003; Sun, 2008)

2.3. Healthfulness and taste of foods

Taste is an important factor when choosing food (Park, 2004; Seo, 2005). Regardless of money spent on a meal (Lee & Crange, 2007) or consumers’ nationalities (Carrillo et al., 2011; DiPietro et al., 2005; Honkanen and Frewer, 2009; Sun, 2008, Verbeke, 2006), the important role of taste in menu item selection has been found.

In exploring ways to reduce obesity, healthfulness has attracted increasing attention from the media, foodservice industry, and academia. Recently, customers have become more interested in the nutritional value of what they eat and these customer interests have been

reflected in restaurant sales. According to the *2011 Restaurant Industry Pocket Factbook* (National Restaurant Association, 2011), 71% of the respondents reported attempting to eat healthier at restaurants as compared to two years previous. Consistent with this, the top-selling entrées at Applebee's during two months in 2011 were from the "Under-550-calorie menu" (Horovitz, 2011).

Even if healthfulness is an important factor in selecting menu items, concerns remain regarding taste (Lloyd et al., 1993). Raghunathan et al. (2006) found some customers had negative impressions about healthful menu items. These negative impressions were also noted in Kähkönen and Tuorila's study (1998) where consumers who were provided with low fat nutrient information expected the food to be less pleasant. Although customers have been willing to compromise taste for healthfulness, this willingness to compromise has decreased over time (Verbeke, 2006).

2.4. Healthful menu options at restaurants

Healthful menus are often contrasted to "regular" restaurant menus. Generally, healthful menus contain fewer "unhealthy" ingredients (e.g., fat or calories) and are cooked differently and/or contain substitute ingredients (Lee et al., 2010; Wu & Sturm, 2014). Facing criticism for contributing to the obesity crisis, restaurants have incorporated healthful foods into menus (Brandau, 2011). For example, Uno Restaurant Holding Corporation added healthful menu options and removed trans-fats (Scarpa, 2010). Other restaurants have developed specialty menus featuring low-calorie menu items (Ruggless, 2011)

In addition to providing healthful menu options, the restaurant industry encourages customers to eat healthy through various promotional strategies. Gregory et al. (2006) found that 44% of quick-service restaurant commercials focused on the healthful attributes of menu options

and most restaurants, in the sample, provided nutrition information on websites. For example Wendy's company website provides a calorie calculator to help customers modify calories by selecting various menu alternatives (Wendy's, 2012).

According to Abdullah and Cheng (2001), sales of products low in calories reached \$40 billion in 1990. Glanz and her colleagues (2007) reported that restaurant marketing executives defined healthful foods as low-fat and low-calorie and assumed that customers would share this same definition, thereby emphasizing that the foodservice industry focuses on low-fat and low-calorie menu options. Previous research has demonstrated customers' interests in such foods. Hudson institute found that between 2006 and 2011, the number of low-calorie food and beverage servings consumed increased (2.5%), whereas the number of high calorie servings consumed decreased (4.2%) (Jargon, 2013). Crange et al. (2004) reported that consumers were more aware of fat and calories than other nutrient information, and Chen et al. (2006) found that two considerations for choosing healthful foods were fat content and calories. Therefore, this current study focused on low-fat or low-calorie foods among the healthful options offered by restaurants.

This research tested the hierarchical relationships among values, attitudes, and behavior based on the VAB model. Specifically, the purpose of this study was to investigate the effects of perceived health value on attitudes towards low-fat or low-calorie foods, particularly perceived taste and healthfulness, and behavioral intentions related to these foods. The specific research hypotheses were as follows:

H1. Customers' perceived health values will have a positive effect on their attitudes toward taste of those menu items.

H2. Customers' perceived health values will have a positive effect on their attitudes toward healthfulness of those menu items.

H3. Customers' perceived health values will have a positive effect on their behavioral intentions regarding low-fat or low-calorie restaurants' menu items.

H4. Customers' positive attitudes toward taste of low-fat or low-calorie restaurant menu items will have a positive effect on their behavioral intentions regarding those menu items.

H5. Customers' positive attitudes toward healthfulness of low-fat or low-calorie restaurant menu items will have a positive effect on their behavioral intentions regarding those menu items.

Figure 1 shows the relationships proposed in this study.

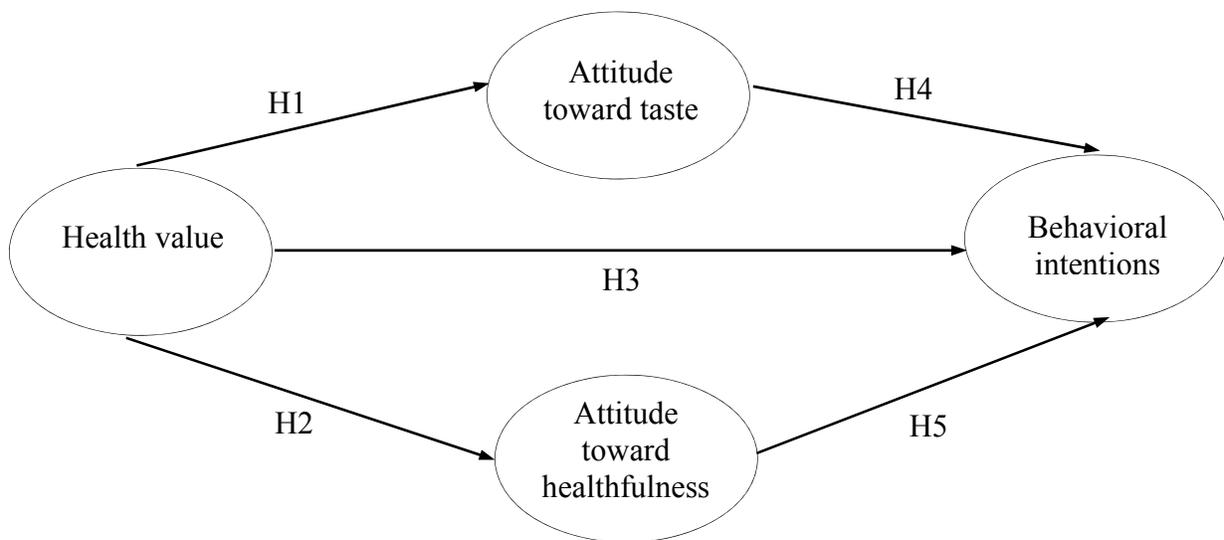


Fig. 1. *Proposed model*

3. Methodology

3.1. Respondents and data collection

Participants were students, faculty members, staff, and alumni at a Midwestern university in the United States, who had eaten at a casual dining restaurant. Approval from the Institutional Research Board was received prior to any data collection. To administer the questionnaire, an

email invitation with a link to the online survey was sent to 35,300 potential participants: 26,128 students, 6,171 faculty and staff, and 3,001 alumni.

3.2. Instrument development

Items were generated to measure each construct – health values, attitudes toward healthfulness of healthful menu items, attitudes toward taste of healthful menu items, and behavioral intentions – based on scales used in previous studies. All constructs were measured with multiple items using a seven-point Likert-type scale (1 = strongly disagree to 7 = strongly agree).

The questionnaire began with the screening question, “Have you ever eaten at a casual dining restaurant?” and then five sections followed. First, respondents were asked to rate their perceived health values based on five items (Tudoran et al., 2009). Second, respondents were asked to assess their attitudes toward healthfulness of low-fat/low-calorie restaurant foods using six items (Krystallis et al., 2003; Roininen et al., 1999). Third, they were asked to rate their attitudes toward taste of low-fat or low-calorie restaurant foods based on seven items (Roininen et al., 1999). Fourth, respondents were asked to rate their behavioral intentions regarding low-fat or low-calorie restaurant foods (Zeithaml et al., 1996). Finally, 10 demographic questions were asked including three about eating out behavior (See Table 1).

To refine the research instrument, the questionnaire was pilot tested with 18 graduate students and 7 faculty and staff members in the hospitality management department in a Midwestern university. Reliability and content validity were examined. The questionnaire was revised based on the feedback.

Table 1
Survey instruments

Constructs	Items
Health value	Having good health means a lot to me Good health is not important to me I often think about my health I think of myself as a person who is interested in healthful foods I'm not concerned about the health-related consequences of what I eat
Attitudes toward healthfulness	I believe that consuming low-fat or low-calorie restaurant foods keeps my body in shape I believe that eating low-fat or low-calorie restaurant foods keeps cholesterol level under control The consumption of healthful menu items low in fat or calories improves my health I think that low-fat or low-calorie restaurant foods are healthier than regular food choices The healthfulness of low-fat or low-calorie restaurant foods does not make a difference to me It is important for me that my daily diet contains low-fat or low-calorie restaurant foods
Attitudes toward taste	I enjoy the taste of healthful menu items low in fat or calories In terms of taste, I do not believe that low-fat or low-calorie restaurant foods are a source of pleasure I think that some people don't want to eat low-fat or low-calorie restaurant foods because of taste I finish my low-fat or low-calorie restaurant foods even when I do not like the taste of it Taste of low-fat or low-calorie restaurant foods meets my expectation Compared with regular food choices, the taste of low-fat or low-calorie restaurant foods is better When I want to reward myself by consuming something tasty, I consume low-fat or low-calorie restaurant foods
Behavioral intentions	Purchasing intentions Willingness to recommend Positive word of mouth

3.3. Data analysis

Frequencies were computed to describe demographics and Cronbach's alpha was used to assess measurement reliability. To investigate mean differences in each construct depending on

participants' demographic characteristics, independent sample t-test and one-way analyses of variance (ANOVAs) were conducted. To explore the research hypotheses, a two-step approach suggested by Anderson and Gerbing (1988) was employed. First, confirmatory factor analysis (CFA) was used to ensure validity of the measurement model. Second, structural equation modeling analysis (SEM) was used to examine the hypothesized relationships among variables (Figure 1); AMOS 19.0 software was used.

4. Results

4.1. Sample profile and mean differences in each construct based on demographic characteristics

A total of 2,155 responses were collected for a response rate of 6.1%. After excluding 967 questionnaires due to incompleteness, 1,188 were used for analysis. The demographic profile of respondents is shown in Table 2.

The independent sample t-test showed that females had significantly higher mean ratings in health value ($M = 5.963$, $SD = 0.982$; $t = -4.687$, $p < .001$); attitudes toward taste of low-fat or low-calorie menu items ($M = 4.274$, $SD = 1.085$; $t = -5.141$, $p < .001$); and behavioral intention regarding those menu items ($M = 4.648$, $SD = 1.363$; $t = -6.224$, $p < .001$) compared to males' mean ratings ($M = 5.663$, $SD = 1.050$; $M = 3.911$, $SD = 1.162$; $M = 4.102$, $SD = 1.411$ respectively). Also, ANOVAs showed mean ratings in attitudes toward healthfulness of low-fat or low-calorie menu items were significantly different among three income levels (low, middle, high) ($F[2,1118] = 3.360$, $p < .05$). Post hoc Bonferroni tests found that participants belonging to the higher income level ($M = 4.546$, $SD = 1.360$) had more positive attitudes toward healthfulness of low-fat or low-calorie menu items compared to those in the low level of income

($M = 4.280$, $SD = 1.394$). Significant differences among ethnicity and education levels were not found.

Table 2
Demographic information

Characteristics		Frequency	Percentage
Gender	Male	363	31.2%
	Female	799	68.8%
Age	18-24 years	390	33.1%
	25-34 years	237	20.1%
	35-44 years	136	11.5%
	45-54 years	189	16.0%
	55-64 years	193	16.4%
	Older than 64 years	34	2.9%
Ethnicity	African American	18	1.5%
	Asian	55	4.7%
	Caucasian	1038	89.2%
	Hispanic	23	2.0%
	Native Hawaiian or other Pacific Islander	3	0.3%
	Other	27	2.3%
Household income	Less than \$20,000	423	37.6%
	\$20,000 to \$39,999	125	11.1%
	\$40,000 to \$79,999	332	29.5%
	\$80,000 to \$119,000	155	13.8%
	\$120,000 to \$149,000	47	4.2%
	Over \$150,000	43	3.8%
Education	Less than high school diploma	1	0.1%
	High school diploma	42	3.6%
	Some college, but no degree	294	24.9%
	Associate degree	43	3.6%
	Bachelor's degree	318	26.9%
	Graduate degree	470	39.8%
	Other	14	1.2%

4.2. Measurement model

Utilizing CFA, standardized regression weighted values (i.e. standardized factor loading for the proposed model) ranged from 0.023 to 0.923, suggesting that certain items did not represent the construct being measured; thus, eight items with factor loadings ≤ 0.6 were deleted based on Hair et al.'s suggestions (2009) and after modifications, the total number of indicators was reduced to 13 items. The measurement properties obtained from CFA for the finalized model are shown in Table 2. The data indicated an acceptable level of inter-item reliability and composite reliability, above the minimum requirement of 0.7 (Hair et al., 2009), which suggests that the items were reliable for measuring each construct. To estimate whether the measurement items appropriately represent the latent constructs which the items are supposed to measure, construct validity was assessed using both convergent validity and discriminant validity (Hair et al., 2009). Convergent validity was evaluated with standardized factor loadings and average variance extracted (AVE). The results were satisfactory with all factor loadings being significant at the .001 level (Anderson and Gerbing, 1988) and the Average Variance Extracted values (AVEs) greater than .5, which is the cutoff point to confirm an adequate convergence (Hair et al., 2009). Discriminant validity was assessed by comparing AVEs with the squared correlations between constructs; results showed that the squared correlations between each pair of constructs were all less than the AVEs, indicating acceptable discriminant validity (Fornell and Larcker, 1981). The correlations among constructs are shown in Table 3. Therefore, both convergent and discriminant validity demonstrated acceptable construct validity. The overall model fit of the finalized model was acceptable at $\chi^2 = 226.037$ ($df = 59$, $p < .001$), RFI = 0.960, NFI = 0.974, TLI = 0.970, CFI = 0.980, RMSEA = 0.049.

Table 3
Confirmatory factory analysis

Constructs	Items	Standardized factor loadings	Cronbach's alpha	Composite reliability	Average variance extracted
Health value (HV)	HV-1	.708	.794	.985	.589
	HV-2	.682			
	HV-3	.865			
Attitudes toward healthfulness (AH)	AH-1	.840	.808	.981	.791
	AH-2	.857			
	AH-3	.847			
Attitudes toward taste (AT)	AT-1	.900	.724	.980	.564
	AT-2	.704			
	AT-3	.660			
	AT-4	.720			
Intentions (IT)	IT-1	.891	.905	.977	.767
	IT-2	.811			
	IT-3	.923			

Note. $\chi^2 = 226.037$, RFI = 0.960, NFI = 0.974, TLI = 0.970, CFI = 0.980, RMSEA= 0.049

Table 4
Correlation among constructs

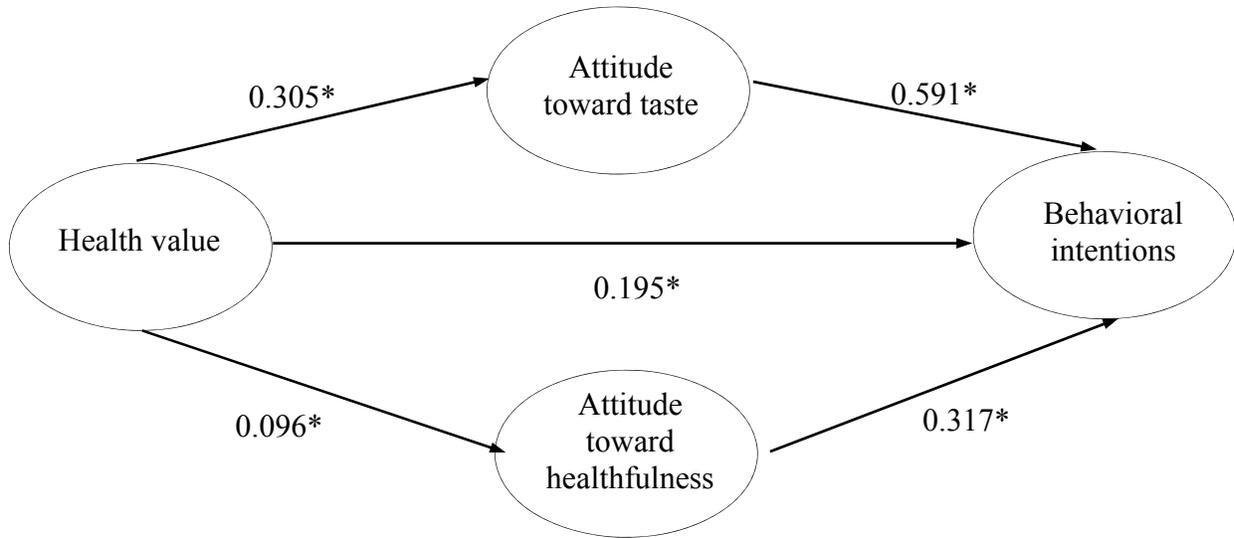
	Health value	Attitude toward healthfulness	Attitude toward taste	Intentions
Health value	0.589			
Attitude toward healthfulness	0.006	0.719		
Attitude toward taste	0.090	0.112	0.565	
Intentions	0.146	0.237	0.508	0.798

Note. Entries under the diagonals are the latent construct correlations. Entries on the diagonal are AVEs.

4.3. Structural model

Structural equation modeling (SEM) was conducted to assure the validity of the proposed model and explore the relationships between the constructs. The SEM results validated the proposed model with $\chi^2 = 324.541$ ($df = 60$, $p < .001$), RFI = .943, NFI = .962, TLI = .953, CFI =

.969, RMSEA = .061. The relationships among the constructs of this model were checked using the standard path coefficients retrieved from the results of SEM. Figure 2 presents the proposed conceptual model based on analysis results with the standardized coefficient of each path.



Note. * $p < .001$

Fig. 2. Analysis results of structural model

The empirical tests of the SEM model showed that health value (HV) had significantly positive impacts on both behavioral intentions (IT) ($\beta = .195, p < .001$) and on attitudes toward low-fat or low-calorie restaurant foods, in terms of both taste (AT) ($\beta = .305, p < .001$) and healthfulness (AH) ($\beta = .096, p < .001$). The impacts of the perceive health value on behavioral intentions (IT) and attitudes toward healthfulness of such menu items (AH) were statistically significant but weak, whereas attitudes toward taste (AT) were more significantly affected. Both attitudes toward taste (AT) and attitudes toward healthfulness (AH) of low-fat or low-calorie menu items were also found to have significantly positive impact on the behavioral intentions

regarding those menu items (IT) ($\beta = .591, p < .001$ and $\beta = .317, p < .001$, respectively) with attitudes toward taste (AT) having the more significant influence. Therefore, all proposed relationships among constructs were statistically significant.

5. Discussion and conclusion

Results revealed that perceived health values had a positive effect on both customer attitudes towards low-fat or low-calorie menu items and behavioral intentions. This confirms using the VAB model and is consistent with previous research (Reime et al., 2000; Tudoran et al., 2009; Westcombe and Wardle, 1997). Although previous studies also found positive effects of health value, most focused on consumers' purchasing behaviors toward specific types of foods (e.g., seafood or cheese) not low-fat, low-calorie foods (Olsen, 2003; Westcomb and Wardle, 1997). A report published by the Keystone Center (2006) pointed out that current studies on eating behaviors and attitudes were not specific to a dining-out setting. Thus, one significant contribution of this research is that it has extended the existing literature by empirically testing this theoretical argument in casual dining restaurant setting.

This study suggests some potential implications for policy makers, educators, and the foodservice industry. Based on our findings, the degree to which people value their health had a relatively weak direct effect on behavioral intention; however the degree to which people value their health had a stronger effect on behavioral intention when attitude served as the antecedent of behavioral intention. Therefore, health value appears to be one of the central motivations behind selection intention of low-fat or low-calorie menu items, indicating that one of the best ways to improve healthy eating at restaurants is to encourage people to value their health. Values are culturally and socially learned (Vinson et al., 1997), which means values could be changed. Changing values could lead to changes in both attitudes and behaviors, which persist for a long

time (Rokeach, 1973); thus, increased health values would result in long-lasting healthy eating behavior. In particular, social standards or norms are important in value change and can be conveyed through persuasive communication (Rokeach and Ball-Rokeach, 1989). When society makes people aware of the importance of their health, people may gradually change their health-related behaviors, such as eating behaviors, reflecting their changed values. Thus, a clear and consistent public message regarding the importance of a healthy diet and encouraging people to eat healthy should continue to be provided.

The foodservice industry might benefit from our findings. Our findings suggest that health value could be an important market segmenting criteria. Demographic and geographic information have been most frequently used for segmenting markets (Bowen, 1998), however, considering the role of values in consumer purchasing decisions, using values as another criterion could achieve more precise market segmentation. In addition, through assessment of customers' value orientation and the new value trend, marketers could identify new product opportunities, reposition existing products, and develop more effective marketing strategies. For example, Lone et al. (2009) suggested that for more health-conscious customers, promotional strategies emphasizing healthfulness of menu options (e.g., nutrition information) would be beneficial, whereas customers with lower health consciousness would be discouraged from choosing healthful menu options if these strategies were used with them.

The present study also found customers' attitudes toward the healthfulness and taste of low-fat or low-calorie restaurant foods play an important role in creating positive behavioral intentions. This result was consistent with the prediction of the VAB model. Empirically, this was in accordance with the findings of Hearty et al. (2007), which showed that healthy eating behaviors (e.g., increased fruit and vegetable intake, decreased consumption of high-calorie

beverages) were positively associated with positive attitudes toward healthy eating. Other studies attempted to predict the effects of attitudes on healthful food selection behaviors through a structured theoretical framework, such as the theory of planned behavior (TPB) developed by Ajzen (1991). These included the intentions to consume soft drinks (Kassem et al., 2003), to reduce fat intake (Paisley and Sparks, 1998), and to consume a low-fat diet (Armitage and Conner, 1999), all of which were significantly affected by attitude.

The present study suggests that healthfulness of low-fat or low-calorie menu items has a significant influence on intentions to choose those menu items, but that the role of taste is more important. This suggests that marketers wishing to promote healthful menu items should not focus solely on these items' health benefits – instead, they should emphasize excellent taste. Because people evaluate food taste based not only on the actual taste experienced but also on their expectation of the food (Schifferstein, 1996), marketers could incorporate words reminiscent of good taste into the descriptions for healthful menu items to boost positive perception and increase the probability that customers will choose them (Wansink et al., 2001). Also, by helping customers become more frequently exposed to healthful foods through monetary marketing strategies (e.g., discount coupons, price reduction), restaurants could acclimate customers to the taste of such menu items, which in turn, form positive attitudes (Waterlander et al., 2009). Of course, the actual taste of the healthful menu may ultimately be more important in improving customers' positive attitudes toward those menu items and influence whether they choose them again. Therefore, restaurants should make an effort to develop healthful menu items that also taste good. For example, Seasons 52 (Season 52, 2012), a restaurant chain owned by Darden Restaurants Inc., developed an entire menu of items with no more than 475 calories each and used particular cooking techniques (e.g., wood-fire grilling) to

enhance taste. Therefore, restaurant owners should continue to invest time and money in motivating and training chefs and menu developers to create healthful menu items that taste good.

6. Limitations and Future Research

This study has several limitations that need to be addressed. First, this study did not include a diverse sample. Compared to the general American demographic profile, the respondents were more educated, and female respondents and white respondents were over-represented. Also, because the survey was conducted in one Midwestern university, geographical restriction is a limitation. It would be valuable for future research to include more diverse samples reflecting the U.S. population profile. Second, this study did not investigate the moderating roles of the participants' demographics in our theoretical model, however, through ANOVA, we found mean differences in some constructs by gender and income level. Therefore, future research should examine the moderating effects of various demographic characteristics in the theoretical model to achieve more precise results and provide more useful implications to marketers, educators, practitioners, and researchers in prompting healthy eating. Third, this study surveyed behavioral intentions and used them to predict actual behavior, but there may, in reality, be a gap between intention and performance; therefore, future research should measure actual behavior instead of intentions. Finally, this study did not investigate the specific effects of self-conception; based on previous research self-conception also seems to be a good predictor of healthy eating behaviors, and therefore, future researchers should investigate the role of self-conception in shaping consumers' healthy eating behaviors.

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