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The Effect of Cognitive Dieting Behavior on Consumers' Food Perceptions, Emotional Responses, and Value Conflict in Restaurants

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KEYWORDS

Health consciousness,
Perceived healthfulness,
Affective responses,
Food decision making.

ABSTRACT

This study was intended to examine the influence of health consciousness on health/taste inferences, affect-based inferences, and perceived conflict between taste and health in food decision making. Seven hundred and fifty-four participants completed the survey. Structural equation modeling with a maximum likelihood method was used to test the relationships among constructs, following the two-step approach. The results of this study showed that more health-conscious consumers have a higher perceived healthfulness of food items but lower anticipated taste. In addition, this study also found consumers' cognitive responses influenced affective responses. Results suggested that when restaurants promote menu items as both healthy and tasty, consumers' positive hedonic emotions (such as pleasure) increased and negative self-conscious emotions (such as guilt) decreased, and consumers' efforts to balance health and taste were supported. At last, the implications both for academia and marketing were also established and discussed.

1. INTRODUCTION

Goal-based motivation is a critical part of decision process. Food consumption decisions often involve multiple goal fulfillment manifested in a tradeoff of two goals: hedonic and utilitarian (Dhar & Simonson, 1999). The short-term hedonic goal emphasizes on taste enjoyment and the long-term utilitarian goal focuses on nutrition-related goals such as health preservation and enhancement (Dhar & Simonson, 1999). A hedonic goal is likely to direct attention to taste and/or atmospheric cues; conversely, a utilitarian goal is likely to skew attention toward fact-based information such as nutrition value justifying the purchase. Cognitive behavioral dieting refers to consumers' dieting behaviors and thoughts (Martz, Sturgis, &

Gustafson, 1996). In food consumption, goal-based motivation is likely to vary by individual dieting tendency or health consciousness.

Given the importance of nutrition to individual health and welfare, many researchers have examined factors influencing consumers' food-choice decisions. Tastiness and healthiness are two significant determinants of consumers' food consumption behaviors (Dhar & Simonson, 1999). Food-related decisions tend to be more automatic than other behaviors and often involve the use of heuristic cues to direct the non-conscious processes (Cohen & Farley, 2008). When consumers make instinctual decisions, they are more susceptible to external environmental and social influences (Cohen & Babey, 2012). As such, consumers use contextual cues to process cog-

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nitive responses such as estimating healthfulness and anticipating the taste of food items. Research has focused on the cognitive responses related to behavioral intentions and food choices. However, few studies have assessed how food-related perceptions (e.g., perceived healthfulness and anticipated taste) influence consumers' efforts at balancing taste and health, and the role of affective responses.

The present study was intended to examine the influence of health consciousness on health/taste inferences, affect-based inferences, and perceived conflict between taste and health in food decision making. More specifically, the research questions include: 1) does health consciousness affect the healthiness and tastiness perceptions of attributes? 2) does expected quality affect positive and negative emotions? and 3) does emotions affect value conflicts between taste and health?

2. LITERATURE REVIEW

2.1. The Effect of Dieting Behavior on Consumers' Responses

Obesity has increased over the past decades (Chandon & Wansink, 2007). Meanwhile, health-conscious consumers have also increased (Kim, Joung, & Choi, 2016; Kim, Kim, & Jeon, 2016). Consumers now have greater access to calories and other nutritional information at the point of sale in restaurants, affording the potential for consumers to improve their individual health and well-being (Lee, 2016). Many researchers have proposed measurement scales for dieting, such as the three-factor eating questionnaire (TFEQ; Stunkard & Messick, 1985), body esteem scale (BES; Franzoi & Shields, 1984), and the health behavior self-efficacy scale (Sallis, Pinski, Grossman, Patterson, & Nader, 1988). Although the term "dieting behavior" was previously used interchangeably with dietary restraint, Martz et al. (1996) made the distinction between dieting behavior and dietary restraint, and developed the cognitive behavioral dieting scale to measure current dieting behaviors for weight loss purposes. Cognitive behavioral dieting refers to consumers' dieting behaviors and thoughts, such as current dieting, regulating calorie intake and losing weight (Martz et al., 1996).

Dieting behavior is regarded as an essential component influencing consumers' healthy food consumption behaviors (Carels, Konrad, & Harper, 2007). An individual's current dieting behavior is associated with motivational processes and

self-regulatory behaviors, such as choosing low-calorie food over high-calorie, and influences consumers' cognitive (e.g., perceived healthfulness of food item) and emotional responses. Depending on the level of health-consciousness, the food items may be evaluated differently and the relationships among anticipated emotions and behaviors can vary (Irmak, Vallen, & Robinson, 2011). For instance, with more health-conscious consumers, an increase in perceived healthfulness is more likely to increase anticipated positive hedonic emotions and decrease anticipated negative self-conscious emotions.

Hypotheses: Dieting behavior is positively related to the consumers' perceived healthfulness of the food item (H_1), negatively related to the consumers' anticipated taste of the food item (H_2), positively related to anticipated positive hedonic emotions (H_3), negative self-conscious emotions (H_4), and positively related to consumers' perceived conflict in balancing taste and health (H_5).

2.2. The Effect of Food Perceptions on Anticipated Emotions

Lazarus's (1991) model proposed that cognitive appraisal processes of internal and situational conditions lead to emotional responses, which in turn result in coping activities. The theoretical foundation links are also explained by Bagozzi's (1992) model: appraisal \rightarrow emotional response \rightarrow coping. Quality and value are highly associated with appraisals; these in turn, induce emotional responses and behavior intentions.

Giner-Sorolla (2001) made the distinction between hedonic emotions and self-conscious emotions. Hedonic emotions are spontaneous due to an increased familiarity resulting from greater developmental history. In the hedonic affect, positive emotions include happiness, pleasure, excitement, delight, and satisfaction. Self-conscious emotions, in contrast, are more reflective, due to the fact they require more effort and thoughtful processing. In the self-conscious affect, negative emotions include guilt, shame, and regret (Giner-Sorolla, 2001). According to recent work by Zhong and Mitchell (2010), low-cost hedonic indulgence consumption (e.g., impulsive purchase of a cookie with afternoon coffee) increased consumers' positive emotions and subjective feelings of well-being.

Hypotheses: Perceived healthfulness is positively related to the anticipated positive hedonic emotions (H_6) and nega-

tively related to the anticipated negative self-conscious emotions (H_7).

Hypotheses: Anticipated taste is positively related to anticipated positive hedonic emotions (H_8) and negatively related to anticipated negative self-conscious emotions (H_9).

2.3. The Effect of Anticipated Emotions on Perception of Conflict in Balancing Taste and Health

Over the past decade, consumers' healthy food choices were generally viewed as hedonically unpleasant, as consumers assumed that flavor must be sacrificed in order to achieve health benefits. Today, many diners seek food choices that are healthy and tasty. Similarly, consumers prefer to think that their food choices reflect a more holistic aura of good health rather than a blatant reminder of their weight-loss goals when dining out.

In the decision-making process, emotions have a great effect on consumers' subjective and behavioral responses; therefore, consumers often anticipate feelings about their chosen menu item and use those feelings to guide their decisions. Literature has shown that anticipated pleasure and guilt are significant indicators in determining consumers' decisions about how much food to consume (Baumeister, 2002; Dhar & Simonson, 1999; Shiv & Fedorikhin, 1999). Anticipated emotions influence cognitive processing (e.g., health-related information) and encourage healthy food consumption.

Hypotheses: Anticipated positive hedonic emotions are ne-

gatively related to consumers' perceived conflict in balancing taste and health (H_{10}) and anticipated negative self-conscious emotions are positively related to consumers' perceived conflict in balancing taste and health (H_{11}).

3. METHODOLOGY

The purpose of this study was to investigate the relationship among the six proposed constructs. Participants were recruited through an online survey tool. Participants were ostensibly asked to help review a menu designed for a full service restaurant, and were asked to indicate the menu item they were likely to order. Participants were then directed to a survey questionnaire pertaining to *dieting behavior* (Martz et al., 1996), *perceived healthfulness* (Kozup, Creyer, & Burton, 2003), *anticipated taste* (Ragunathan, Naylor, & Hoyer, 2006), *positive hedonic emotions*, *negative self-conscious emotions* (Giner-Sorolla, 2001), and *perceived conflict in balancing taste and health* (Hassan, Shiu, & Michaelidou, 2010). Measurement scale items were developed from previous literature and seven-point scales were used.

Structural equation modeling (SEM) with a maximum likelihood method was used to test the relationship among constructs, following the two-step approach recommended by Anderson and Gerbing (1988). Confirmatory factor analysis (CFA) was first conducted to determine whether the manifest measurement items reflected the hypothesized latent constructs. When measures were validated, SEM was utilized to test the validity of the proposed model and hypotheses.

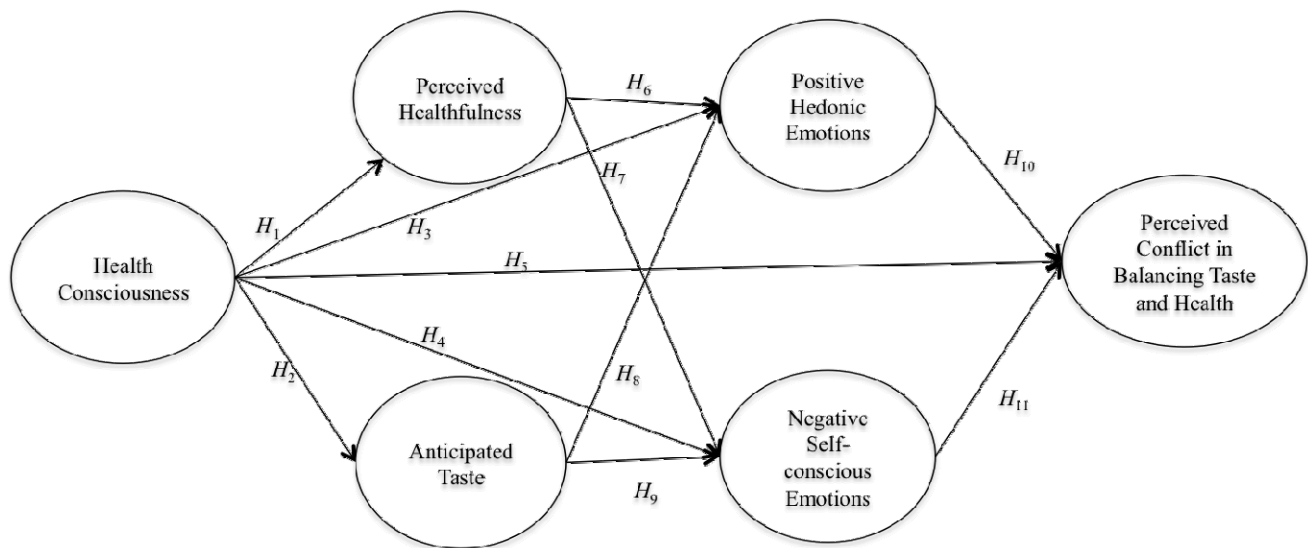


Fig. 1. Conceptual research model.

4. RESULTS

4.1. Demographic Information

Seven hundred and fifty four participants completed the survey. The gender composition was 61% male ($n=456$) and 40% female ($n=298$). Sixty percent were between 18~34 years old.

Table 1. General Characteristics of the Subjects

	Characteristic	Frequency	Percentage (%)
Gender	Male	456	60.5
	Female	298	39.5
Age	18~34	453	60.1
	35~44	162	21.5
	45~54	71	9.4
	55~64	59	7.8
	65 or order	9	1.2
Education	High school graduate	83	11
	Some college but no degree	276	36.6
	College graduate	303	40.2
	At least some graduate school	92	12.2
Ethnicity	Caucasian	563	74.7
	African American	62	8.2
	Native American	4	.5
	Hispanic	40	5.3
	Asian	75	9.9
	Pacific Islander	3	.4
	Other	5	.7
	Prefer not to respond	2	.3
Annual household income	Less than \$25,000	188	24.9
	\$25,000 to \$49,999	252	33.4
	\$50,000 to \$74,999	164	21.8
	\$75,000 to \$99,999	78	10.3
	\$100,000 or more	50	6.6
	Prefer not to respond	22	2.9
Average dine out	Almost never per week	261	34.6
	One or two times per week	408	54.1
	Three or four times per week	69	9.2
	More than five times per week	16	2.1
	Total	754	100.0

About half (52.4%) of the participants had a college degree or higher. The majority (75%) of the participants were Caucasian and 55.2% had an annual household income between \$25,000 and \$74,999. Fifty four percent dined out one or two times per week.

4.2. Confirmatory Factor Analysis

Confirmatory factor analysis was undertaken to test the overall fit of the construct model. Details of the properties of the measurements are shown in Table 2. The level of internal consistency in each construct was acceptable with Cronbach's alpha estimates ranging from .78 to .92, exceeding the minimum requirement of .60 (Nunnally, 1978). Convergent validity was observed because of factor loadings greater than .60 (Anderson & Gerbing, 1988) and composite reliabilities, ranging from .61 to .95 (Fornell & Larcker, 1981; Nunnally & Bernstein, 1994). Additionally, the average variance extracted (AVE) of the six constructs ranged from .50 to .75, which exceeded the minimum requirement of .50. The discriminant validity was tested by comparing AVE with the squared correlation between constructs, and the inter-construct squared correlation was less than the AVEs (Fornell & Larcker, 1981).

4.3. Structural Equation Model and Relationship Testing

SEM was performed to test the validity of the proposed model and hypotheses. The goodness-of-fit statistics of the structural model showed that the model reasonably fit the data, $\chi^2=570.598$, $p<.001$, CMIN=2.654, NFI=.950, TLI=.959, CFI=.968, IFI=.968, RMSEA=.047. Fig. 2 presents the standardized path coefficients. The hypothesized relationship between dieting behavior and perceived healthfulness was supported by the corresponding estimate of .106 ($t=2.51$, $p<.05$), indicating that more health-conscious consumers showed higher perceived healthfulness of food items. The hypothesized relationship between dieting behavior and anticipated taste was supported by the corresponding estimate of $-.094$ ($t=-2.21$, $p<.05$), indicating that more health-conscious consumers showed lower anticipated taste of food items. The standardized path coefficient from dieting behavior to positive hedonic emotions was .056 ($t=1.61$, $p=.108$), indicating that dieting behavior was not a significant predictor of positive hedonic emotions. The standardized path coefficient from dieting behavior to negative self-conscious emotions was .324 ($t=7.55$, $p=.000$), indicating that more health-conscious consumers demonstrated lower

Table 2. Results of Confirmatory Factor Analysis for Measurement Scale Properties

Construct	Items	Standardized factor loadings	Cronbach's α	Composite reliability	AVE
Dieting behavior	Planned out	.619	.78	.61	.50
	Low in calories	.628			
	Dieting	.786			
	Weight concerns	.711			
Perceived healthfulness	Healthy	.886	.91	.86	.69
	Nutritious	.768			
	Healthy diet	.779			
	Nutrition level (Poor-Good)	.856			
	Bad for my heart - Good for my heart	.848			
Anticipated taste	Delicious	.919	.92	.95	.75
	Appealing	.871			
	Flavorful	.860			
	Enjoyable	.804			
Positive hedonic emotions	Happiness	.894	.92	.84	.70
	Pleasure	.863			
	Excitement	.747			
	Delight	.865			
	Satisfaction	.812			
Negative self-conscious emotions	Guilt	.800	.88	.88	.72
	Shame	.894			
	Regret	.856			
Perceived conflict in balancing taste and health	Balancing taste and calorie content	.788	.83	.70	.71
	Choosing taste over calorie content	.899			

negative self-conscious emotions. The hypothesized relationship between dieting behavior and perceived conflict in balancing taste and health was supported by the corresponding estimate of .417 ($t=9.56$, $p=.000$), indicating that more health-conscious consumers showed a higher perceived conflict in balancing taste and health. In summary, the hypotheses (H_1 , H_2 , H_4 , and H_5) were supported but H_3 was rejected. Details of the structural parameter estimates are shown in Table 3.

The effect of perceived healthfulness on positive hedonic emotions and negative self-conscious emotions was supported by significant standardized estimates of .124 ($t=3.80$, $p=.000$) and $-.254$ ($t=-6.66$, $p=.000$) respectively. Based on the results, consumers with higher perceived healthfulness showed higher positive hedonic emotions and lower negative self-conscious

emotions. The effects of anticipated taste on positive hedonic emotions and negative self-conscious emotions were supported by significant standardized estimates of .616 ($t=15.61$, $p=.000$) and $-.188$ ($t=-4.99$, $p=.000$) respectively. The results indicated that consumers with higher anticipated taste showed higher positive hedonic emotions and lower negative self-conscious emotions. Results provided support for H_6 , H_7 , H_8 , and H_9 .

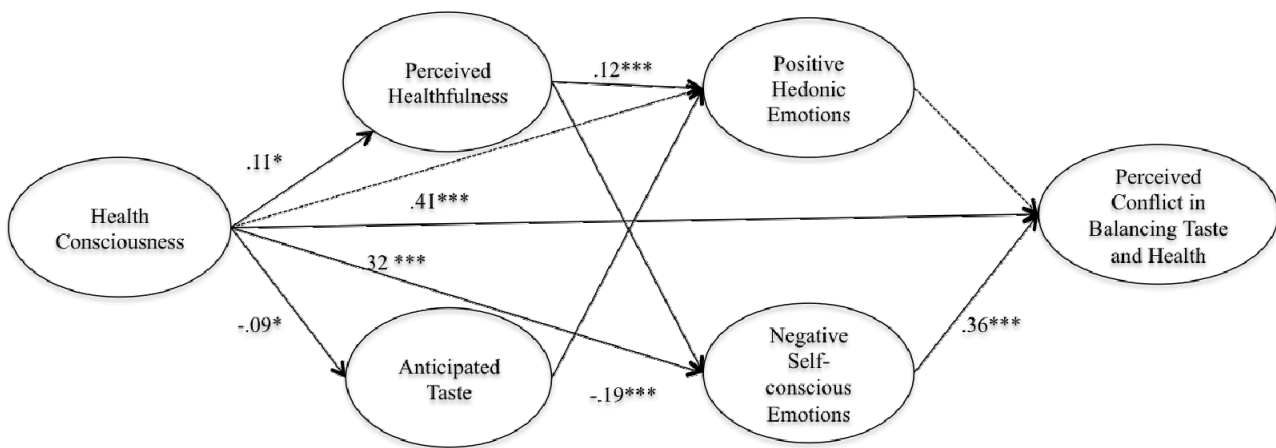
The standardized path coefficient from positive hedonic emotions to a perceived conflict in balancing taste and health was $-.045$ ($t=-1.28$, $p=.201$), indicating that positive hedonic emotions were not significant predictors of a perceived conflict in balancing taste and health. The hypothesized relationship between negative self-conscious emotions and a perceived conflict in balancing taste and health was supported

Table 3. Structural parameter estimates

Hypothesized Path	Path coefficients	t-value	P-value	Results
H1 Dieting behavior → Perceived healthfulness	.106	2.51	.012*	Supported
H2 Dieting behavior → Anticipated taste	−.094	−2.21	.027*	Supported
H3 Dieting behavior → Positive hedonic emotions	.056	1.61	.108	Not Supported
H4 Dieting behavior → Negative self-conscious emotions	.324	7.55	.001***	Supported
H5 Dieting behavior → Perceived conflict	.417	9.56	.001***	Supported
H6 Perceived healthfulness → Positive hedonic emotions	.124	3.80	.001***	Supported
H7 Perceived healthfulness → Negative self-conscious emotions	−.254	−6.66	.001***	Supported
H8 Anticipated taste → Positive hedonic emotions	.616	15.61	.001***	Supported
H9 Anticipated taste → Negative self-conscious emotions	−.188	−4.99	.001***	Supported
H10 Positive hedonic emotions → Perceived conflict	−.045	−1.28	.201	Not Supported
H11 Negative self-conscious emotions → Perceived conflict	.356	9.04	.001***	Supported

Model fit: =601.932, $df=219$, $TLI=.957$, $CFI=.966$, $RMSEA=.048$.

Note: *** $p<.001$, ** $p<.01$, * $p<.05$

**Fig. 2.** Results of structural model.

by the corresponding estimate of .356 ($t=9.04$, $p=.000$), indicating that consumers with higher negative self-conscious emotions showed higher perceived conflict in balancing taste and health. The hypothesis (H_{10}) was rejected but results provided support for H_{11} .

5. CONCLUSIONS

This study proposed a model that delineates the relationships among dieting behavior, food-related perceptions, positive and negative emotional responses, and subsequent perceptions related to the challenge of balancing taste and health in full service restaurants. This study revealed two robust

findings: 1) for more health conscious consumers, an increase in perceived healthfulness is more likely to increase feelings of anticipated pleasure and reduce the feelings of anticipated guilt and 2) individual characteristics, and health/taste inferences influence positive and negative anticipated emotions. The results of this study suggest that more health-conscious consumers have higher perceived healthfulness of food item but lower anticipated taste. *Healthier – less tasty* cognitive associations were found, similar to research by Raghunathan et al. (2006). Additionally, this study found consumers' cognitive responses (e.g., evaluation of food quality) influenced both affective responses (e.g., positive hedonic emotions and negative self-conscious emotions). Results suggest that when

restaurants promote menu items as both healthy and tasty, consumers' positive hedonic emotions (such as pleasure) increase and negative self-conscious emotions (such as guilt) decrease, and consumers' efforts to balance health and taste are supported. In summary, the empirical results support Bagozzi's (1992) theory and Lazarus's model (appraisal → emotional response → coping).

This study provides important theoretical and practical implications. This study extends research on connecting between psychological factor, cognitive and affective to food related value conflicts and literature that explores the motivational processes underlying the value conflicts between taste and health. In terms of practical implications, this study provides guidance to restaurant managers on the role of anticipated affective responses in consumers' decision-making process and provides restaurateurs a framework to understand how individual differences influence decision-making processes in a healthy food consumption. Despite the significance of present study, there are several limitations. The first limitation is related to the sample of the study. Random sampling in an online survey constitutes a limitation in terms of the representativeness of the sample. The second limitation is related to the use of a scenario-based experimental design. Consequently, the hypothetical nature of the choices poses a limitation.

REFERENCES

- Anderson, J. C., Gerbing, D. W. (1988). Structural modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.
- Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. *Social Psychology Quarterly*, 55(2), 178-204.
- Baumeister, R. F. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Psychology*, 28(4), 670-676.
- Carels, E., Konrad, K., Harper, J. (2007). Individual differences in food perceptions and calorie estimation: An examination of dieting status, weight, and gender. *Appetite*, 49(2), 450-458.
- Chandon, P., & Wansink, B. (2007). The biasing health halos of fast-food restaurant health claims: Lower calorie estimates and higher side-dish consumption intentions. *Journal of Consumer Research*, 34(3), 301-314.
- Cohen, D. A., & Babey, S. H. (2012). Contextual influences on eating behaviours: Heuristic processing and dietary choices. *Obesity Reviews*, 13(9), 766-779.
- Cohen, D., & Farley, T. A. (2008). Peer reviewed: Eating as an automatic behavior. *Preventing Chronic Disease*, 5(1), 1-7.
- Dhar, R., & Simonson, I. (1999). Making complementary choices in consumption episodes: Highlighting versus balancing. *Journal of Marketing Research*, 36(1), 29-44.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Franzoi, S. L., & Shields, S. A. (1984). The body esteem scale: Multidimensional structure and sex difference in a college population. *Journal of Personality Assessment*, 48(2), 173-178.
- Giner-Sorolla, R. (2001). Guilty pleasures and grim necessities: Affective attitudes in dilemmas of self-control. *Journal of Personality and Social Psychology*, 80(2), 206-221.
- Irmak, C., Vallen, B., & Robinson, S. R. (2011). The impact of product name on dieters' and nondieters' food evaluations and consumption. *Journal of Consumer Research*, 38(2), 390-405.
- Hassan, L. M., Shiu, E. M. K., & Michaelidou, N. (2010). The influence of nutrition information on choice: The roles of temptation, conflict and self-control. *Journal of Consumer Affairs*, 44(3), 499-515.
- Kim, H. S., Joung, H. W., & Choi, E. K. (2016). A study of nutrition knowledge, confidence, and body image of university students. *Culinary Science & Hospitality Research*, 22(1), 70-77.
- Kim, D. J., Kim, Y. J., & Jeon, M. S. (2016). The effects of restaurant and LOHAS images on customer satisfaction and loyalty: focusing on the incremental information content of LOHAS image. *Culinary Science & Hospitality Research*, 22(6), 1-3.
- Kozup, J. C., Creyer, E. H., & Burton, S. (2003). Making healthful food choices: The influence of health claims and nutrition information on consumers' evaluations of packaged food products and restaurant menu items. *Journal of Marketing*, 67(2), 19-34.
- Lazarus, R. S. (1991). *Emotion and adoption*. New York: Oxford University Press.
- Lee, S. M. (2016). Influence of informational clues on subjective knowledge, concern, and satisfaction and behavioral intention toward healthy foods in full-service restaurants. *Culinary Science & Hospitality Research*, 22(6), 78-86.

- Martz, D., Sturgis, E., & Gustafson, S. (1996). Development and preliminary validation of the cognitive behavioral dieting scale. *International Journal of Eating Disorders*, 19(3), 297-309.
- Nunnally, J. C. (1978). *Psychometric theory*. McGraw-Hill, New York, NY.
- Nunnally, J. C., Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill, New York, NY.
- Raghunathan, R., Naylor, R. W., & Hoyer, W. D. (2006). The unhealthy equal tasty intuition and its effects on taste inferences, enjoyment, and choice of food products. *Journal of Marketing*, 70(4), 170-184.
- Sallis, J.F., Pinski, R.B., Grossman, R.M., Patterson, T.L., & Nader, P.R. (1988). The development of self-efficacy scales for health-related diet and exercise behaviors. *Health Education research*, 3(3), 283-292.
- Shiv, B., & Fedorikhin, A. (1999). Heart and mind in conflict: The interplay of affect and cognition in consumer decision making. *Journal of Consumer Psychology*, 26(3), 278-292.
- Stunkard, A. J., & Messick, S. (1985). The three-factor eating questionnaire to measure dietary restraint, disinhibition, and hunger. *Journal of Psychosomatic Research*, 29(1), 71-83.
- Zhong, J.Y., & Mitchell, V. (2010). A mechanism model of the effect of hedonic product consumption on well-being. *Journal of Consumer Psychology*, 20(2), 152-162.

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