



University of  
Massachusetts  
Amherst

## **Celebrity Endorsement, Message Framing, and Online Social Support: The Gateway Bug to Edible Insect Consumption**

Item Type	event;event
Authors	Baker, Melissa A;Legendre, Tiffany S
Download date	2025-05-14 09:19:47
Link to Item	<a href="https://hdl.handle.net/20.500.14394/49091">https://hdl.handle.net/20.500.14394/49091</a>

# **Celebrity Endorsement, Message Framing, and Online Social Support: The Gateway Bug to Edible Insect Consumption**

## **Introduction**

The world cannot support the current food production techniques, especially with protein and their detrimental effect on long term sustainability issues such as greenhouse gas emissions, water use, land use, and feed requirements. The United Nations (U.N.) finds the key answer lies in human consumption of edible insects as they are a sustainable, nutritious, and cost effective food source already consumed across the globe (Van Huis et al., 2013). The very fact that insect rearing can address environmental, socio-economic, and health concerns simultaneously makes insect consumption a critical area of investigation in all tourist destinations and represents one of the most important issues of food security for the greater good of humanity. In order to feed the growing population and keep our environment from depletion, humans will have to adapt to the changing times and learn to consume edible insects as part of their diet.

The question of how to encourage Westerners (Europeans, Canadians, Americans, Australians, and New Zealanders) to eat insects as a sustainable long-term food source for the growing population remains perplexing. While research in food science has examined edible insects from a sustainability, production, and health standpoint, research has neglected to examine customer psychology and marketing initiatives that can break the barrier to edible insect consumption. As noted in the widely cited U.N. report, the principle strategy to increase consumer acceptance of edible insect products is to stress both the environmental and nutritional benefits (van Huis et al. 2013; Deroy et al. 2015). Despite research that stresses that consumers need to be educated about the sustainability and nutritional benefits, wider acceptance has been lagging. One key component missing from edible insect research is to examine effective strategies associated with higher behavioral attitudes and actions (Berger et al. 2018). Therefore, it may be critical to investigate other avenues of persuading consumers to try edible insects, especially from a marketing and psychology perspective (Baker et al. 2016).

Three key marketing variables that may provide important managerial implications as they are under-researched are the influence of celebrity endorsement (Van der Veen and Song 2018), online social support (Tajvidi et al. 2018), and message framing (Berger et al. 2016). Research that examines marketing initiatives that persuade individuals to try edible insects can open the door to more successful marketing techniques. Based on the vital nature of this sustainability initiative and the timely need to persuade Westerners to consume edible insects for the greater good, this research seeks to address these gaps and contribute theoretically and managerially. Specifically, this study conducts a 2 (celebrity endorsement: present vs. absent) x 2 (online social support: low vs. high) x 2 (message framing: hedonic vs. utilitarian) between-subjects experimental design to test the casual effects on tourist's perceptions of risk, trust, and behavioral intentions.

## **Literature Review**

### ***Edible Insects***

With predictions of increased population growth and food scarcity facing the world, humans need to reconsider our food choices and will need to adapt to eating alternative food sources (Dermody and Chatterjee, 2016). This represents a key research issue for the changing times.

By 2050, the United Nations projects a one-third increase in global population (to 9.3 billion), approximately 870 million people will suffer from malnutrition because of a lack of food, and the world will not have enough clean water and land use to provide food for the global population (Baker et al. 2016). A solution for the greater good lies in edible insect consumption. Entomophagy is practiced across East Asia, Africa, South and Central America and there are more than 1900 types of edible insects (Baker et al. 2016; 2018). Edible insects require less land and water use, have lower greenhouse gas emissions, have a high feed-conversion ratio, are nutritious and a high source of protein, and can bring economic benefits to local communities, residents, and tourists. Although there are over 1900 types of edible insects and cultures and destinations that consume edible insects as part of their diet, edible insects are seen with disgust and as not a viable food option for many global consumers, especially those in Western countries (Baker et al. 2018). Given the intense, unsustainable meat consumption of Western societies and anticipated escalation of existing food problems, the successful introduction of insects into Western diets is now a long-term priority for future generations and the greater good of humanity and the planet. At the very least, the challenge is to persuade an insect-phobic culture to recognize these creatures as a legitimate food resource (Looy et al. 2013). And this has been a key challenge as Western consumers still view insects with disgust.

### ***Disgust***

The adoption of edible insects for human consumption has faced significant acceptance issues, mainly related to customer disgust (Baker et al. 2018). It is important to examine the role of disgust and its influence on acceptability (Dermody and Chatterjee 2016) and future behavioral intentions. It is unclear how to minimize perceptions of disgust, and thus more research is needed, especially from a psychology and marketing standpoint (Baker et al. 2018). However, as disgust is primarily a result of social and cultural learning (Rozin et al. 1984) perhaps there are current marketing and media initiatives that can be examined in today's environment that help eliminate the perceptions of disgust and serve as the gateway to individuals consuming insects.

### ***The Influence of Celebrity***

In advertising, it is said that nothing sells like a celebrity (Wang and Scheinbaum 2016). While earlier studies on celebrity endorsement focus on the endorsers characteristics, more recently research is examining its application from new angles (Tzoumaka et al. 2016). Once such application is to new, novel products, such as edible insects. Currently, most marketing and promotion occurs with entomophagy advocates eating insects on talk shows or promoting the advantages of entomophagy in online videos (Shelomi 2015). One such example is actress Nicole Kidman, who was featured on Vanity Fair and Food and Wine online videos eating insects and supporting insects as a part of her diet (Heller 2018).

For people to believe eating insects is acceptable rather than just plausible, they need to see peers and aspirants engaging in entomophagy in everyday environments (Shelomi 2015). Marketing campaigns featuring celebrity endorsers are thought to have a positive impact on people's attitudes and lead to positive behavioral intentions (van der Veen and Song 2014). Celebrity endorsements have played a prominent role in Australian tourism marketing as a means of engaging with potential tourists (van der Veen and Song 2014). Therefore, examining the influence of a celebrity endorser may be a critical modern media way to entice individuals to try insect food products.

### ***Hedonic versus Utilitarian Framed Message***

Consumer choices are driven by utilitarian and hedonic considerations (Dhar and Wertenbroch 2000). Hedonic purchases are ones whose consumption is primarily characterized by an affective and sensory experience of aesthetic or sensual pleasure (Hirschman and Holbrook 1982). Utilitarian goods are ones whose consumption is more cognitively driven, instrumental, goal oriented, and accomplishes a functional task (Shrahilevitz and Myers 1998). The entomophagy campaign of “Eat Insects...Save the Planet” has focused on raising awareness with the hope that once people see that insects are edible or taste them for themselves, they will accept the idea and add insects to their diet (Shelomi 2015). Other taglines are that eating insects might be the “last great hope to save the planet” (Martin 2014).

The principle strategy is to stress both the environmental and nutritional benefits to convince Westerners to start integrating insects into their diets (Deroy et al. 2015). However, despite these efforts, stressing the sustainable and nutritional value of insects is not sufficient to provide motivation to drive a change in diet (Deroy et al. 2015). The frequent promotion strategy of insects is to highlight the utilitarian benefits associated with their consumption (Berger et al. 2018) but people’s willingness to consume insects can be more effectively influenced by hedonic arguments compared to utilitarian arguments. Therefore, more recently, academics argue that the most effective strategy is to make Westerners enjoy eating insect foods (Deroy et al. 2015). In other words, humans want pleasurable dishes to eat, share, discuss, and photograph. If the marketing message is framed in a hedonic versus utilitarian way, it may entice individuals to purchase these products.

### ***Online Social Support***

Seeing insects in a friend’s kitchen would have a more significant impact than on a television show, since their presence alongside familiar foods in a familiar environment implied edibility and normalization (Shelomi 2015). There is a lack of literature that examines the connection between the social value and online networks (Luna-Cortes et al. 2018) especially as it relates to potential consumption behavior. Social support can be made in online contexts through “like”, “share” and “follow” buttons (Tajvidi et al. 2018). Online social support plays an important role in affecting individual’s acceptance of their behaviors. In this vein, if a tourist posts their edible insect consumption experience to social media and gains a high amount of social support, they would be more likely to be satisfied with the experience, and more likely to try and purchase edible insect products in the future. This represents the third critical modern media marketing initiative that is a critical gap in the literature.

### ***Behavioral Intentions***

If a product has perceived risks, this will affect purchasing decisions (Phillips and Hallman 2013). Celebrity endorsers lead to consumer behaviors intentions and more positive attitudes toward the product (Tzoumaka et al. 2016). Individuals who have already eaten insects have a significantly more positive attitude toward entomophagy and are more willing to eat and purchase insect food products in the future (Megido et al. 2016). Therefore, this study seeks to examine the influence of celebrity endorsement, online social support and hedonic versus utilitarian message framing on tourist’s perceptions of disgust, risk and behavioral intentions with edible insects.

## **Methodology**

To test the hypothesized relationships, this study uses a 2 (celebrity endorsement: present vs. absent) x 2 (online social support: low vs. high) x 2 (message framing: hedonic vs. utilitarian) between-subjects experimental design. The use of a scenario-based experimental design allows for a high level of control, the ability to manipulate variables individually, and to uncover causal effects. To ensure the quality of the data, this study includes qualification, quality check, and experience questions and is collected from a large online marketing panel. As celebrity endorsement is a commonly used strategy in Australian advertising (Spry et al. 2009) and as actress Nicole Kidman consumes insects in current media, Australia is used as the travel setting. Neophobia, destination attractiveness, and celebrity credibility were controlled to avoid potential confounding effects. All scales were adopted from previous reliable and valid scales using a seven-point Likert-type scale. Independent sample t-tests were used to verify the manipulation checks and ANCOVA was utilized to test three-way interaction effects.

## Results

Participants are mostly White/Caucasian (69.3%), male (53.3%), and they are age between 19-39 years old (67.3%). Also, most of them held bachelor's degree (47.4%). The manipulation of message framing shows that participants understood the scenario as intended ( $M_{\text{utilitarian}} = 5.73$ ,  $n = 215$ ;  $M_{\text{hedonic}} = 3.94$ ,  $n = 222$ ;  $t = 11.59$ ,  $p < .001$ ) and three items are used to test manipulation of social support ( $M_{\text{low}} = 3.76$ ,  $n = 217$ ;  $M_{\text{high}} = 5.60$ ,  $n = 220$ ;  $t = 14.38$ ,  $p < .001$ ).

The results indicate that there are significant three-way interaction effects on the three dependent variables; restaurant advocacy, purchase intention, and satisfaction. Table 1 demonstrates the ANCOVA results.

Table 1. MANCOVA Results of Celebrity Endorsement, Message Framing, and Social Support on Restaurant Advocacy (RA), Purchase Intention (PI), and Satisfaction (SAT)

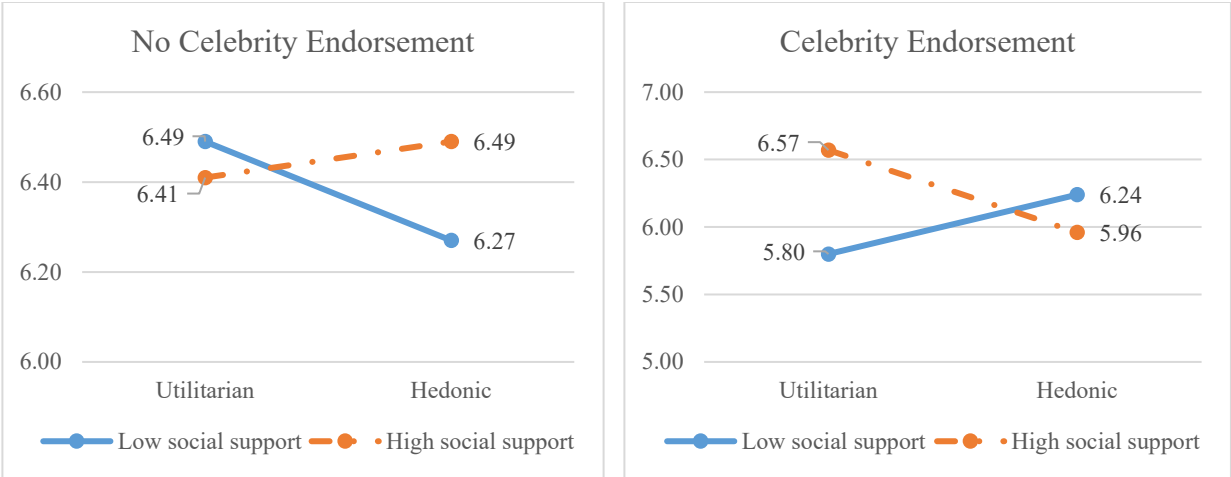
n=437	Univariate follow-ups							
Source	Wilk's Lambda (F)	DV	Type III SS	df	MS	F	p	Partial $\eta^2$
<b>Covariates</b>								
Neophobia	.83 (29.66 <sup>***</sup> )	RA	85.80	1	85.80	77.70	0.000	0.154
		PI	152.67	1	152.67	64.04	0.000	0.131
		SAT	76.12	1	76.12	43.54	0.000	0.093
Site attractiveness	.95 (7.69 <sup>***</sup> )	RA	1.38	1	1.38	1.25	0.265	0.003
		PI	26.35	1	26.35	11.05	0.001	0.025
		SAT	29.47	1	29.47	16.86	0.000	0.038
Source credibility	.98 (3.60 <sup>*</sup> )	RA	7.75	1	7.75	7.02	0.008	0.016
		PI	0.29	1	0.29	0.12	0.729	0.000
		SAT	1.91	1	1.91	1.10	0.296	0.003
<b>Test effects</b>								
Celebrity endorsement	.98 (2.76 <sup>*</sup> )	RA	8.10	1	8.10	7.33	0.007	0.017
		PI	6.41	1	6.41	2.69	0.102	0.006
		SAT	2.52	1	2.52	1.44	0.231	0.003
Message framing	1.00 (.37)	RA	0.62	1	0.62	0.56	0.455	0.001
		PI	0.35	1	0.35	0.15	0.703	0.000

		SAT	1.28	1	1.28	0.73	0.393	0.002
Social support	.99 (1.69)	RA	2.63	1	2.63	2.38	0.124	0.006
		PI	11.29	1	11.29	4.74	0.030	0.011
		SAT	3.40	1	3.40	1.95	0.164	0.005
Celebrity endorsement x Message framing	.99 (1.13)	RA	0.01	1	0.01	0.01	0.923	0.000
		PI	4.02	1	4.02	1.69	0.195	0.004
		SAT	0.22	1	0.22	0.13	0.721	0.000
Celebrity x Social support	1.00 (.29)	RA	0.79	1	0.79	0.72	0.398	0.002
		PI	0.47	1	0.47	0.20	0.656	0.000
		SAT	0.91	1	0.91	0.52	0.472	0.001
Message framing x Social support	.99 (1.19)	RA	3.69	1	3.69	3.34	0.068	0.008
		PI	2.64	1	2.64	1.11	0.293	0.003
		SAT	3.40	1	3.40	1.95	0.164	0.005
Celebrity endorsement x Message framing x Social support	.97 (4.54**)	RA	12.50	1	12.50	11.32	0.001	0.026
		PI	10.42	1	10.42	4.37	0.037	0.010
		SAT	16.61	1	16.61	9.50	0.002	0.022
Error	-	RA	470.43	426	1.10			
		PI	1015.51	426	2.38			
		SAT	744.72	426	1.75			
Total	-	RA	17866.5 1	437				
		PI	9769.44	437				
		SAT	11186.3 1	437				
Corrected total	-	RA	609.53	436				
		PI	1261.09	436				
		SAT	913.77	436				

Note: DV = Dependent variable; SS = Sums of squares;  $df$  = Degrees of freedom; MS = Mean square; RA = Restaurant advocacy; PI = Purchase intention; SAT = Satisfaction  
 \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ ;  $R^2$  for RA = .23, for PI = .20, and for SAT = .19

Figure 1 shows that when celebrity endorsement is not present and message framing delivers utilitarian values, participants indicate relatively high level of tourism purchasing advocacy regardless of social support. However, when message conveys hedonic value, significantly decreased insect purchasing advocacy is observed, especially when social support is low. However, when celebrity endorsement was present, social support does not matter when the restaurant communicates hedonic messages. However, when insect-serving restaurant indicates utilitarian messages, the greater social support leads to greater insect-serving restaurant advocacy when it is compared to low social support situation.

Figure 1. Three-way interaction effects on restaurant advocacy



As shown in Figure 2, purchase intention also shows similar patterns. When celebrity endorsement was absent, hedonic message framing and high social support increase purchase intention, however, when celebrity endorsement is present, utilitarian message framing with high social support accentuate the effects on purchase intention. Finally, the Figure 3 exhibits that no celebrity endorsement and low social support is particularly detrimental to the level of expected satisfaction especially when message was framed with hedonic values. The opposite pattern was observed on the satisfaction when celebrity endorsement was present and utilitarian message framing was provided with high social support.

Figure 2. Three-way interaction effects on purchase intention

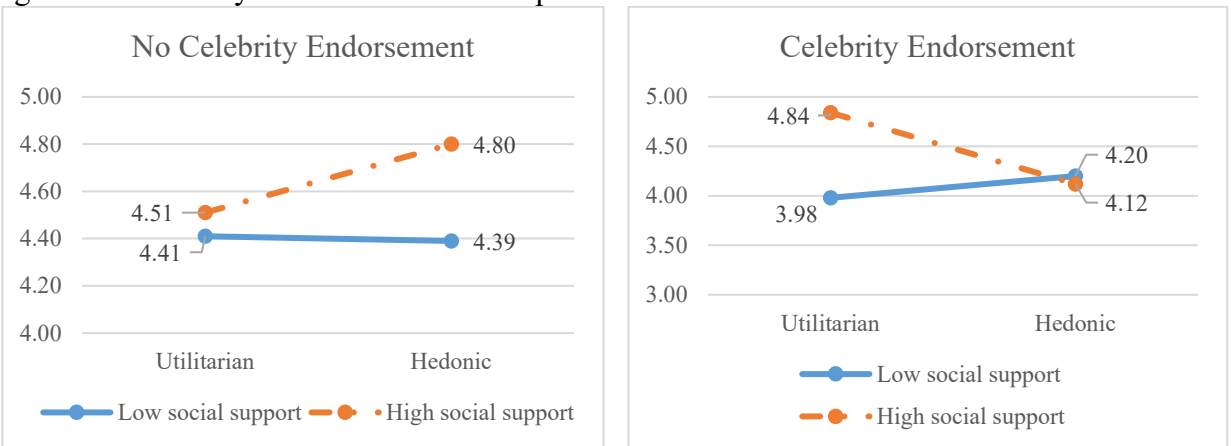
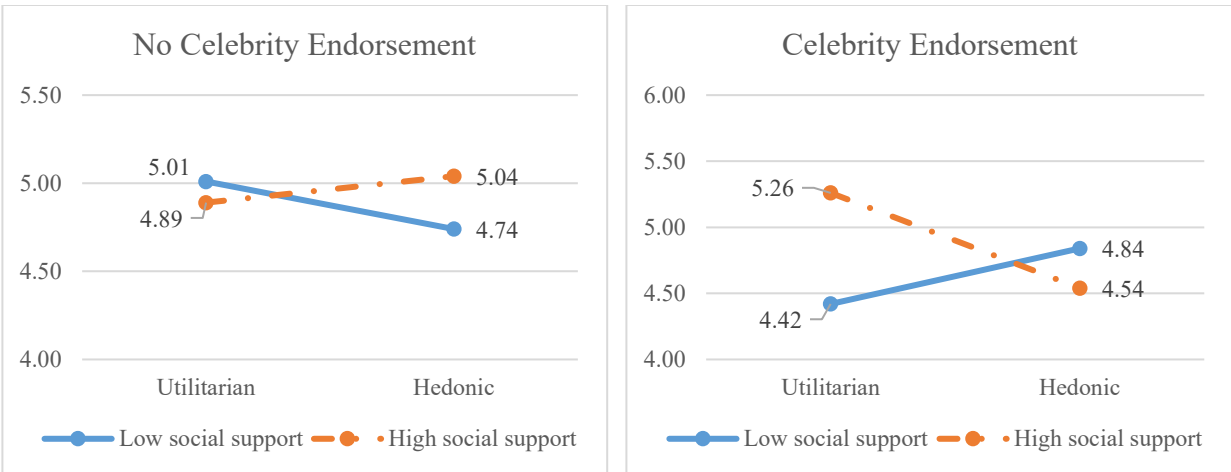


Figure 3. Three-way interaction effects on satisfaction (expected)



### Conclusion and Discussion

The goal of this study is to examine the interaction effects of celebrity endorsement, message framing, and social support on behavioral intentions toward edible insect serving hospitality businesses in tourism locations. The analyses results explain that edible insects and perhaps other negatively perceived local food can be more positively perceived when combined with appropriate marketing strategies. This study finds that when celebrity endorsement is not present and message conveys utilitarian values, social support does not seem to play critical role on changing behavioral intentions of travelers in terms of trying unfamiliar and somewhat disgusting local food such as edible insects. However, if the business delivers a hedonic message, social support matters; high social support helps people try new and unfamiliar things during their travel and low social support does the opposite. This means that if local businesses serve unfamiliar and perceived disgusting (or unfamiliar) foods, they cannot use a celebrity endorsement strategy, they can adopt different message framing marketing tactics and try to increase social support to achieve greater marketing outcomes.

When celebrity endorsement is implemented, regardless of high or low social support, hedonic message framing does not show any differences in persuading travelers in terms of trying new food such as edible insect. However, when the message is framed with utilitarian value, significantly increased behavioral intentions are observed when the business receives high social support. This may be aligned with the fact that celebrities are increasingly championing humanitarian causes that benefit people and places. As such organizations such as the U.N., F.A.O., and destination management organizations can utilize celebrity endorsers if they wish to continue focusing on the utilitarian benefits, which may be the gateway to getting individuals to try edible insects and purchase them in the future as a sustainable benefit.

In conclusion, this research builds upon important calls for research to examine marketing tactics to increase customer acceptance of edible insects. The findings build upon the gaps in the literature surrounding psychology and marketing of edible insects (Baker et al. 2016), message framing (Berger et al. 2018), social support (Tajvidi et al. 2018), celebrity endorsement (van der Veen and Song 2018) and acceptance of edible insect food products (Baker et al. 2018). The findings of our research confirms that different marketing strategies are required depending on how the local/unique food was depicted in media.



## References

- Baker, M. A., Shin, J. T., and Kim, Y. W. (2016). "An exploration and investigation of edible insect consumption: the impacts of image and description on risk perceptions and purchase intent." *Psychology and Marketing*, 33(2): 94-112.
- Baker, M. A., Shin, J. T., and Kim, Y. W. (2018). Customer Acceptance, Barriers, and Preferences in the US. In *Edible Insects in Sustainable Food Systems* (pp. 387-399). Springer, Cham.
- Berger, S., Bärtsch, C., Schmidt, C., Christandl, F., and Wyss, A. M. (2018). "When utilitarian claims backfire: Advertising content and the uptake of insects as food." *Frontiers in Nutrition*, 5: 88.
- Dermody, J., and Chatterjee, I. (2016, July). "Food glorious food, fried bugs and mustard! Exploring the radical idea of entomophagy in advancing sustainable consumption to protect the planet." In *Competitive paper in conference proceedings, Academy of Marketing Annual Conference, Newcastle*.
- Deroy, O., Reade, B., and Spence, C. (2015). "The insectivore's dilemma, and how to take the West out of it." *Food Quality and Preference*, 44: 44-55.
- Dhar, R., and Wertenbroch, K. (2000). "Consumer choice between hedonic and utilitarian goods." *Journal of Marketing Research*, 37(1): 60-71.
- Hansen, J., Holm, L., Frewer, L., Robinson, P., and Sandøe, P. (2003). "Beyond the knowledge deficit: recent research into lay and expert attitudes to food risks." *Appetite*, 41(2): 111-121.
- Heller, C. (January 28, 2018). <https://www.foodandwine.com/news/nicole-kidman-bug-eating>
- Hirschman, Elizabeth C. and Morris B. Holbrook (1982). "Hedonic consumption: Emerging concepts, methods and propositions." *Journal of Marketing*, 46 (Summer)
- Kuttschreuter, M. (2006). "Psychological determinants of reactions to food risk messages." *Risk Analysis*, 26: 1045–1057.
- Looy, H., Dunkel, F. V., and Wood, J. R. (2014). "How then shall we eat? Insect-eating attitudes and sustainable foodways." *Agriculture and Human Values*, 3(1): 131- 141.
- Luna-Cortés, G., López-Bonilla, J. M., and López-Bonilla, L. M. (2018). "Self-congruity, social value, and the use of virtual social networks by Generation Y travelers. *Journal of Travel Research*, doi:0047287518755502.
- Martin, D. (2014). *Edible: An Adventure Into the World of Eating Insects and the Last Great Hope to Save the Planet*. Boston: Houghton Mifflin-Harcourt.
- Megido, R. C., Gierts, C., Blecker, C., Brostaux, Y., Haubruge, É., Alabi, T., and Francis, F. (2016). "Consumer acceptance of insect-based alternative meat products in Western countries." *Food Quality and Preference*, 52: 237-243.
- Phillips, D. M., and Hallman, W. K. (2013). "Consumer risk perceptions and marketing strategy: The case of genetically modified food." *Psychology and Marketing*, 30(9): 739-748.
- Preacher, K. J., and Hayes, A. F. (2008). "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models." *Behavior Research Methods*, 40(3): 879-891.

- Rozin P, Fallon A, and Mandell R. (1984). "Family resemblance in attitudes to foods." *Developmental Psychology*, 20: 309–314.
- Shelomi, M. (2015). "Why we still don't eat insects: Assessing entomophagy promotion through a diffusion of innovations framework." *Trends in Food Science and Technology*, 45(2): 311-318.
- Spry, A., Pappu, R., and Bettina Cornwell, T. (2011). "Celebrity endorsement, brand credibility and brand equity." *European Journal of Marketing*, 45(6): 882-909.
- Strahilevitz, Michal A. and George F. Loewenstein (1998). "The effect of ownership history on the valuation of objects." *Journal of Consumer Research*, 25 (December): 276.
- Tajvidi, M., Richard, M. O., Wang, Y., and Hajli, N. (2018). "Brand co-creation through social commerce information sharing: The role of social media." *Journal of Business Research*.
- Tzoumaka, E., Tsiotsou, R. H., and Siomkos, G. (2016). "Delineating the role of endorser's perceived qualities and consumer characteristics on celebrity endorsement effectiveness." *Journal of Marketing Communications*, 22(3): 307-326.
- Van der Veen, R., and Song, H. (2014). "Impact of the perceived image of celebrity endorsers on tourists' intentions to visit." *Journal of Travel Research*, 53(2): 211-224.
- Van Huis, A., Van Itterbeeck, J., Klunder, H., Mertens, E., Halloran, A., Muir, G., and Vantomme, P. (2013). *Edible Insects: Future Prospects for Food and Feed security*. FAO.
- Wang, S. W., and Scheinbaum, A. C. (2018). "Enhancing brand credibility via celebrity endorsement: Trustworthiness trumps attractiveness and expertise." *Journal of Advertising Research*, 58(1): 16-32.