Research Poster

Nutritional Nuances: Audience Segmentation for Tailored Beef Nutrition Communication

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Introduction

The heightened awareness regarding personal health and nutrition has caused more consumers to adopt conscious eating into their diets (Grimmelt et al., 2022). Consumers have developed concerns about the healthiness of red meat due to high amounts of saturated fats and the association with cardiovascular issues, diabetes, and cancer (Latvala et al., 2012), leading consumers to limit red meat consumption (Grimmelt et al., 2022). Nutrition and diet preferences are nuanced, with factors such as culture, health concerns, social concerns, and age impacting food decisions (McNamara, 2019). Consumers seek products that align with their preferences, and place varying levels of importance on each value (Schwartz, 2012). Communicators should aim to align their messaging with consumer preferences to build trust in the food system (Fischer et al., 2020). Scholars have noted communicators can no longer adopt the one-size-fits-all marketing approach, as target audiences are diverse and have unique habits, needs, and preferences, calling for practitioners to segment large audiences (Bartolucci, 2023). Other industries have explored segmentation to enhance strategic communication efforts through its ability to offer recommendations for communication strategy.

Conceptual Framework

This study was guided by audience segmentation, which allows for better communication with large, broad audiences by breaking them into smaller groups of individuals who share similar values and characteristics (Slater,1996). Segmenting can be done by demographics, geographics, psychographics, or behaviors (Grunig, 1989; Slater, 1996). Through segmentation, credible information can then be disseminated to align with audience segment members' beliefs, morals, and values (Maibach et al., 2009). Dividing large heterogeneous audiences into smaller segments of shared attributes leads to personalized messages that can result in lasting attitude changes (Tuten, 2021; Grunig, 1989). Strategic communication campaigns can leverage segments to share knowledge, inform attitudes, and elicit behavior changes among groups (Slater, 1996). Disseminating complex scientific information, like beef nutrition, as tailored personalized messages will likely resonate with the intended audience (Hine et al., 2014). We chose to segment audiences based on the theoretical considerations from the Elaboration Likelihood Model, which posits attitude and information processing are often dependent on attitude and topic involvement (Petty & Cacioppo, 1986).

Methodology

To develop audience segments, we conducted a non-probability opt-in sample via Qualtrics Market Research Panels of U.S. adults who consumed beef and reflected the U.S. census quotas for age, gender, income, and regionality, gathering 1,010 complete responses. The data presented in this poster are part of a larger study where respondents were asked to answer survey questions, which were validated through expert panel reviews and pilot testing. We examined the two questions of attitudes toward beef nutrition and topic involvement. Attitude ($\alpha = 0.92$) was measured using a 5-point Likert Scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*) toward eight statements positioning beef as a: *nutritious choice; excellent source of protein, healthy choice, lean protein, food that gives me strength; great tasting; pleasurable to eat; good for many types of meals* (Beef Research, 2023; Flowers et al., 2019). Following, involvement ($\alpha = 0.89$) was measured toward the same statements using (1 = *Not at all important*, 5 = *Important to me*).

To create the audience segments, we utilized a two-step Hierarchical Cluster Analysis (HCA) method in SPSS 29, which is a statistical procedure to organize data sets into groups based on response patterns (Essary et al., 2022). We conducted an HCA using Ward's method to provide a dendrogram visualizing the emergent clusters (Everitt et al., 2011; OpenAI, 2024). Visual analysis of the dendrogram suggested three groups. A secondary HCA assigned each respondent to one of the three clusters based on their response pattern (Everitt et al., 2011; OpenAi, 2024). After, we conducted ANOVAs to verify the clusters were statistically significant and provide descriptive statistics of the clusters.

Results

Our results suggested three audience segments (Table 1). The first cluster (n = 375) was relatively neutral in terms of attitude toward beef (M = 3.97, SD = .33) and issue involvement (M = 3.92, SD = .39). The second cluster, the largest audience segment (n = 533), had a strongly positive attitude (M = 4.69; SD = .30) and high involvement (M = 4.67; SD = .01). The smallest audience segment was cluster 3 (n = 102), which had the lowest attitude toward beef (M = 2.57; SD = .82) yet still maintained a moderate amount of involvement toward beef nutrition (M = 3.45; SD = .09). The ANOVAs confirmed significant differences across clusters and concluded that both attitude and involvement varied among the three audience segments.

Table 1

Characteristics of Audience Segments

	Cluster 1 (n = 375)		Cluster 2 (n = 533)		Cluster 3 (n = 102)		F (2, 1009)	p	n^2
	M	*SD*	*M*	*SD*	*M*	*SD*			
Attitude	3.97	.33	4.69	.30	2.57	.82	1340.27	<.001	.73
Involvement	3.92	.39	4.67	.01	3.45	.09	482.32	<.001	.49

Conclusions, Implications and Recommendations

Audience segments have unique values and respond differently to messages (Grunig, 1989; Slater, 1996). This study identified three audience segments, each emphasizing the importance of beef nutrition attributes; however, their diverse perspectives allow us to understand their needs and preferences, which should be used for personalized communication (Tuten, 2021). Cluster 1, termed the 'moveable middle,' reported neutral attitudes and involvement, implying they could easily be influenced to improve nutritional perceptions of beef. Cluster 2, the largest segment, expressed overwhelmingly positive attitudes, implying they could be used as an advocate to share positive attributes regarding beef. Cluster 3 had high expectations for beef nutrition but felt these expectations were not met by beef. Thus, it is critical to convey the nutritional attributes of beef to this segment. These findings provide tailored communication strategy based on the cluster's preferences and views for practitioners and academics communicating about beef nutrition. Future research should examine optimal message and source types for each cluster. Practitioners can leverage results from this study for use in beef nutrition communication and should continue to apply segmentation strategies to other sectors of agricultural and natural resources to improve tailored communication strategy. Within the classroom, more curriculum is needed for students to understand the importance of audience segmentation and message tailoring for more effective communication strategy.

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