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# **Importance of Extrinsic Cues of Grass-Fed Beef by U.S. Consumers Across Regions**

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# Importance of Extrinsic Cues of Grass-Fed Beef by U.S. Consumers Across Regions

## Introduction/Need for Research

Extrinsic qualities have become a priority because they affect the type of beef consumers purchase from grocery stores, farmers' markets, restaurants, and private vendors (Cheung et al., 2017; Gwin & Lev, 2011). Some consumers are concerned with the beef they eat, wanting to know about health benefits (Cheung et al., 2017; Gwin & Lev, 2011), the origin of their food (Grunert, 2005), animal welfare (FMI & FMRPE, 2018; Gillespie et al., 2016), concerns about how their beef is produced (Birt, 2017; Gillespie et al., 2016; Yang & Woods, 2016), environmental practices (FMI & FMRPE, 2018), etc. Increased premiums on grass-fed beef have also deterred shoppers from purchasing it (Cheung et al., 2017). This study advances the existing research by exploring the extrinsic quality cues for grass-fed beef across regions in the United States. If beef producers know what consumers value the most, considering that consumption needs change over time, they can react to the trends and communicate about their grass-fed beef products to consumers.

## Theoretical Framework

The total food quality model provides a theoretical framework that describes the extrinsic quality cues perceived by consumers (Grunert et al., 1996). When it comes to extrinsic quality cues, consumers learn about them through the label or information. Grunert (1997) surveyed consumers to determine which quality cues were most important to them when purchasing meat. From the results gathered, extrinsic quality cues were not physically part of the product, relating to price, brand, promotion, packaging, product origin, and animal production. These quality cues help fulfill shoppers' purchase motives when seeking a specific product (Grunert et al., 1996).

## Methodology

Participants were over 18 years old and were the primary grocery buyers for their households in the United States. The number of variables in the instrument and the U.S. population determined the sample size of 484 (Ary et al., 2010). Centiment, a marketing research company, used a nonprobability opt-in sampling technique. Representative balancing ensured opt-in panel respondents reflected the U.S. census on age, ethnicity, gender, and region. Representative balancing overcame the limitations of nonprobability sampling—exclusion, selection, and non-participation bias (Baker et al., 2013). We created a quantitative, descriptive survey in Qualtrics, and Centiment administered the survey. Participants indicated the level of importance of 11 extrinsic quality cues on their decision to purchase or consume grass-fed beef products using a 5-point Likert scale. Experts reviewed the questionnaire to ensure the face and content validity. A Kruskal-Wallis H Test was conducted in IBM SPSS Statistics 23.0 to evaluate if differences existed among the four regions (Northeast, Midwest, South, and West).

## Results

Table 1 shows a statistically significant difference between the regions for price ( $H(3) = 8.75, p = .033$ ). Post hoc pairwise comparisons using a Bonferroni correction revealed a statistically significant difference in price between the West ( $Me = 4.00$ ) and South ( $Me = 5.00$ ) regions but not between other group combinations. Extrinsic quality cues that consumers across all regions found very important ( $Me = 4.00$ ) were the health benefits of consuming grass-fed beef, living a

healthy lifestyle, and humane treatment of animals. Respondents found it somewhat important ( $Me = 3.00$ ) to know how their beef was raised, the farmer who raised it, and the environmental impacts of raising beef. The Northeast ( $Me = 3.50$ ) and West ( $Me = 4.00$ ) found the environmental impacts of beef production slightly more important. The South ( $Me = 4.00$ ) found knowing how their beef was raised to be very important.

Table 1

*Kruskal-Wallis H Test Summary Table for the Differences in the Importance of Quality Cues Among Regions (N = 484)*

Quality cue	$X^2$	$df$	$P$
Price	8.75	3	.033*
Environmental impacts of beef production	2.03	3	.566
Farm preservation	1.90	3	.594
Knowing where the beef was raised	1.63	3	.652
Humane treatment of animals	1.57	3	.665
Naturally raised	1.47	3	.689
Locally raised	1.33	3	.723
Health benefits of consuming beef	1.31	3	.728
Living a healthy lifestyle	0.87	3	.833
Knowing how the beef was raised	0.26	3	.967
Animal welfare	0.14	3	.986

*Note.* U.S. respondents were placed into four regions: Northeast ( $n = 90$ ), Midwest ( $n = 114$ ), South ( $n = 182$ ), and West ( $n = 98$ ). The Likert scale was 1.00-1.99 = not at all important, 2.00-2.99 = slightly important, 3.00-3.99 = neutral, 4.00-4.99 = moderately important, and 5.00 = extremely important.

\*  $p < .05$

### **Conclusions, Implications, and Recommendations/Impact on Profession**

It was unsurprising respondents found the cost to be a statistically significant cue. Grass-fed beef producers need to set competitive pricing and ensure consumers understand the value of their products. Consumers across all regions found four extrinsic quality cues moderately important: humane treatment of animals, naturally raised, health benefits of consuming grass-fed beef, and living a healthy lifestyle. These findings were consistent with Cheung et al.'s (2017) and Birt's (2017) studies. The importance of knowing environmental impacts and how the beef was raised were similar findings by Grunert (2005) and Birt (2017). Research has found that consumers value beef that has been locally raised (Yang & Woods, 2016), although respondents in this study did not find that as important. Further research should learn about consumers' current knowledge of these quality cues and understand why they are important. The findings contribute to regional consumer profiles, which producers can use to target their audience and become a profitable business.

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