

**Revealing Cognitive Structures Through a Hard Laddering Technique**

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### **Introduction and Need for Innovation**

Understanding consumer behavior and perceptions is of keen interest to agricultural communicators seeking to promote agricultural products (Stollar et al., 2024). To effectively create communication strategies, it is important to understand consumer values and their influence on consumer purchasing decisions (Ficher et al., 2020). Consumers subliminally make purchases to satisfy deeper-held values (Gutman, 1982). However, discovering and understanding this connection between consumer preferences and values can be a challenge to obtain through survey research procedures (Hofstedt & Ryan, 2022).

Laddering is a research technique used to identify deeper motivations and values behind product choice, essentially explaining why consumers buy what they buy (Gutman, 1982). In this technique, participants are asked why their selections are significant to them until they reach a deeper held personal value. Structured questions identify connections between product attributes, consequences (i.e., key consumer benefits), and values (i.e., means-end chains). There are two distinct approaches to laddering: soft laddering and hard laddering (Phillips & Reynolds, 2009). Soft laddering is a qualitative technique occurring during an interview setting where participants are asked a series of probing questions related to their choices (Gutman, 1982). In this approach, participants can let their thoughts freely flow. Alternatively, hard laddering is more quantitative in nature and occurs through a survey format where participants are asked the same probing questions and asked to select options determined *a priori* (Jaegar et al., 2023). The purpose of this poster is to describe how we utilized the hard laddering approach using Qualtrics, which has the potential to be applied in a variety of studies regarding decision making.

### **How it Works**

Hard laddering is growing in popularity due to its ability to reach large samples and streamline data analysis (Jaegar et al., 2023). Previously, researchers have utilized laddering software (e.g., Ladder Map, LadderUX), which specializes in facilitating laddering by visualizing data and streamlining data analysis (LadderUX, 2024). However, we sought to explore administering a hard laddering questionnaire using advanced logic features in Qualtrics due to its cost-effectiveness, survey design capabilities, and ability to reach large samples.

The context of our laddering study was to understand U.S. consumers' choices and values regarding beef purchases. To complete the ladder, participants selected the top three product attributes that influence their beef purchases. Then, using carry-forward logic in Qualtrics, the participants ranked their top three selections. From the top selections, we identified their top attribute selection. Next, the participants identified a functional consequence (i.e., direct tangible benefit or outcome). To do so, we used piped text to embed the participants' attribute selection into the following question, "*You selected (their top-ranked attribute) as the most important beef attribute. Why is that important to you?*" After, participants identified a psychological consequence (i.e., internal, emotional, and social outcome). Here, the participants were asked, "*You selected (their functional choice) as important. Why is that important to you?*" Finally, participants identified their main value in relation to the product by completing the following statement using the piped text logic, "*You selected (their psychological choice) as important to you. This is important to me because I value \_\_\_ most.*"

Participants were presented with answer choices from predefined categories identified from a thorough literature review and expert panel review. After data collection, we aggregated and calculated the relationships between participants' attributes, consequences, and value selections

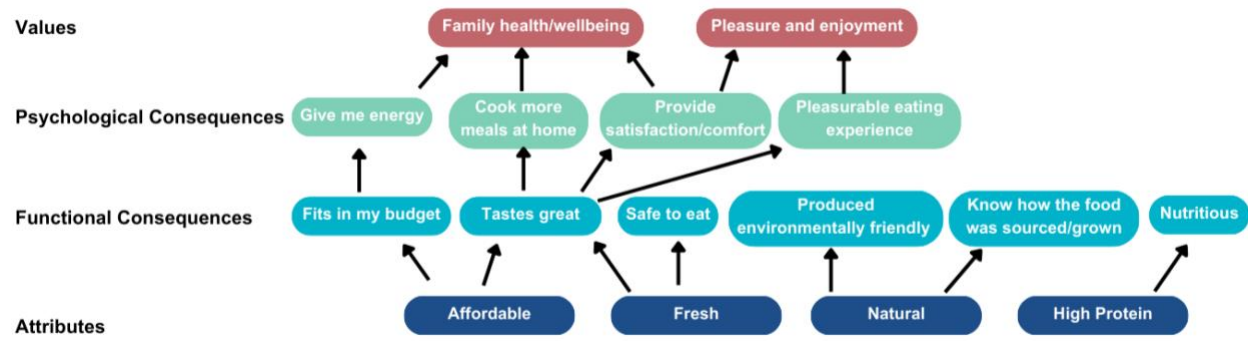
by running crosstabs in SPSS. This analysis informed the simplified implications matrix map to visualize their cognitive thought patterns (Jaegar et al., 2023).

### Results to Date/Implications

We tested this hard laddering technique with a pilot test, or soft launch ( $n = 68$ ), using Qualtrics Market Research panels. The responses were interpreted into a hierarchical value map (Figure 1) to explain how beef consumers associate product attributes with their personal values. Figure 1 shows consumers most frequently selected affordable, fresh, natural, and high protein as attributes important to their purchasing decisions. Attribute selections satisfy the functional consequences (e.g., tastes great) and psychological consequences (e.g., provide satisfaction/comfort). Then, the ladder is completed by satisfying personal values (e.g., family health/wellbeing), providing a richer explanation for consumer choices.

**Figure 1**

*Hierarchical Value Map for U.S. Beef Consumers*



### Future Plans/Advice

We plan to utilize this technique with a larger nationwide study to collect descriptive statistics and inform communication strategy. Prior to selecting the laddering approach, consider the size and scope of your study. While hard laddering is effective for large sample sizes and streamlines data analysis, it limits the participant's thoughts to flow freely (Phillips & Reynolds, 2009). Complete a literature review exploring similar products, seek input from outside experts, and consider conducting interviews to build laddering option statements. Once attributes, consequences, and values are selected, ask practitioners and academics to evaluate the instrument for content and face validity. When constructing survey questions, use simple language and a logical flow. Because of the complex survey design, it is important to conduct multiple pilot tests prior to launching the questionnaire and request a Qualtrics review of the survey design.

### Costs/Resources Needed

Through Qualtrics, the hard laddering is free. However, there are many human resources involved. For example, researchers must budget for additional time commitments to design the survey with advanced features such as carry forward logic and piped text. Additionally, researchers should plan for adequate time to test the display of their survey instrument. There are paid laddering platforms available, which help the coding and categorization process (LadderUX, 2024). When conducting laddering, participants can be incentivized and recruited through a survey panel, which incurs additional costs; however, researchers could minimize costs through convenience samples. Data analysis software (i.e., SPSS, R, or Excel) is necessary.

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