APPENDIX G

EXECTUTIVE SUMMARY

Why MaxDiff Analysis: MaxDiff analysis is a methodology that provides a more effective way for respondents to rank items and reduces the respondent burden compared to a conventional ranking system:

"The common approaches (rating, ranking, and allocation tasks) have weaknesses.

- Rating tasks assume that respondents can communicate their true affinity for an item using a numeric rating scale. Rating data often are negatively affected by lack of discrimination among items and scale use bias (the tendency for respondents to use the scale in different ways, such as mainly using the top or bottom of the scale, or tending to use more or fewer available scale points.)

- Ranking tasks become difficult to manage when there are more than about seven items, and the resulting data are on an ordinal scale only.

- Allocation tasks are also challenging for respondents when there are many items. Even with a manageable number of items, some respondents may have difficulty distributing values that sum to a particular value. The mechanical task of making the allocated points sum to a particular amount may interfere with respondents revealing their true preferences."

-The MaxDiff System Technical Paper: Version 8. Sawtooth Software. Sawtooth Software, Inc. 2013. www.sawtoothsoftware.com

What MaxDiff Analysis Is: MaxDiff provides deeper understanding of not only the ranking of a particular list of items but also the relative weight of one item when compared to any other in the set. To achieve this respondents are shown different scenarios (smaller groupings – usually 3-4 – of the full list of items) and having them evaluate each scenario by identifying the item they consider to have the lowest important and alternatively the item they consider to have the highest importance.

"Consider a set in which a respondent evaluates four items, A, B, C and D. If the respondent says that A is best and D is worst, these two 'clicks' (responses) inform us on five of six possible implied paired comparisons:

A>B, A>C, A>D, B>D, C>D

where '>' means 'is more important/preferred than.'

The only paired comparison that we cannot infer is B vs. C. In a choice among five items, MaxDiff questioning informs on seven of ten implied paired comparisons.

MaxDiff questionnaires are relatively easy for most respondents to understand. Furthermore, humans are much better at judging items at extremes than in discriminating

among items of middling importance or preference (Louviere 1993). And since the responses involve choices of items rather than expressing strength of preference, there is no opportunity for scale use bias (MaxDiff is "scale free") (Cohen and Markowitz 2002)."

Multiple scenarios can be asked to build an inference for B vs. C as well, and in aggregate, results reveal a more dynamic weighted ranking system.

-*The MaxDiff System Technical Paper: Version 8*. Sawtooth Software. Sawtooth Software, Inc. 2013. www.sawtoothsoftware.com

MaxDiff Survey Instrument Design: In order to fully understand true discrimination between ranking of specific elements of the NCAP safety rating system these nine items will be assessed by each respondent:
- Safety ratings
- Fuel economy
- Price
- Standard equipment
- Optional equipment
- Safety technologies
- Warranty information
- Where the vehicle was assembled
- Vehicle model information (e.g., engine, trim)

Respondents will be asked to review 7 unique scenarios, reviewing 4 items in each scenario, to build a comprehensive understanding of how they would rank these 9 items.