1. Introduction

Over the past two decades conjoint analysis (CA) has been a popular method used to measure and analyze consumers' preferences for market and non-market goods. Two of the widely used CA formats are choice-based conjoint analysis (CBCA) and ranking conjoint analysis (RCA).

The ability of CBCA to mimic the actual purchasing process and the capacity of RCA to provide information on consumer's preferences for all the profiles shown in a choice set have attracted the interest of many researchers.

For example, some studies have compared both CA formats and found differences in results due to among others, different statistical techniques and experimental designs used.

In our study, we compared CBCA and RCA using identical experimental design for both CA formats (e.g. we used the same number of choice cards and number of options per choice card (see Figure 1 and 2)).

Furthermore, our study differs from previous studies in a number of ways including (1) the non-hypothetical nature of our experiments, (2) the inclusion of the holdout task to test the external validity of the estimates, (3) inclusion of the no-choice option, and (4) the use of the hierarchical Bayesian multinomial logit model to estimate individual level partworths and thereby accommodate possible heterogeneity in the results across respondents.

This topic is important since if the estimated preferences are indeed similar across these two popularly used CA formats, then researchers could comfortably and confidently use either one of these formats depending on among others research objectives, and be assured that estimates are generally robust across both formats. However, if there are differences in the results, then it would be more of a challenge to pick which format to use when using CA for preference elicitation since one cannot be sure how reliable the findings will be.

2. Experimental design

To assess the differences or the similarities between non-hypothetical CBCA (NH-CBCA) and non-hypothetical RCA (NH-RCA), we recruited a random sample of 86 undergraduate students to evaluate different combinations of a sandwich and a drink (four types of sandwich (Hamburger, Frankfurter, Omelet, and Vegetarian) and four different drinks (Classic Coke, Diet Coke, Water, and Juice)). Each combination was priced at one of four price levels (3.35€, 3.80€, 4.30€ or 4.75€).

In the experiment, students were then randomly assigned to two CA formats. Each participant was presented with 16 choice sets of four options each.

In the NH-CBCA, each participant was asked to choose between one of the three combinations and the no-choice option while in the NH-RCA, each participant was asked to rank the three combinations from the most preferred to the least preferred combination or to select the no-choice option if she/he does not prefer any of the three combinations.

Since both CA formats are non-hypothetical, participants were informed that they have to purchase one of their choices that will be randomly picked and pay the price corresponding to that choice.

The two data sets obtained from the NH-CBCA and the NH-RCA treatments were coded and estimated similarly.

3. Results

In the analysis of the results, we found that participants in the NH-CBCA and the NH-RCA behave similarly.

In fact our results showed that the estimated partworths from both statistical techniques and experimental designs used. Incentivizing participants to behave truthfully and eliminating hypothetical choice-based conjoint analysis treatments were coded and estimated similarly.

4. Conclusion

In our results, we found that the estimated partworths from both mechanisms have a statistically similar predictive power in-sample and out-of-sample as well. In other words, participants respond similarly when they are asked to state the option they would choose or the option they would most prefer (i.e. through a ranking exercise).

This is an important result because it points out the promising use of the NH-RCA that not only provides similar results to the NH-CBCA but also makes available to the researcher important additional information on consumers' preferences for the no-chosen profiles. We also found that, in general, the estimated WTP is statistically indifferent between the NH-CBCA and the NH-RCA. This is also an interesting finding since the CBCA and the RCA are increasingly used to estimate consumers' WTP for different products and services (e.g. environmental products, health insurance etc.).