Discussion of “Risk Preference Types, Limited Consideration, and Welfare” by Levon Barseghyan and Francesca Molinari

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It is a pleasure to discuss this article by Levon Barseghyan and Francesca Molinari. It represents the third article in a series of papers by the authors (with co-authors; Barseghyan, Molinari, and Thirkettle 2021, Barseghyan et al. 2021) in which they incorporate consumers’ limited consideration when making decisions under risk. In this paper, the authors allow for rich unobserved heterogeneity across consumers: (i) consumers can vary in their preference type, i.e., make decisions according to expected utility theory (EU) and Yaari (1987)’s dual theory (DT); (ii) consumers can vary within each type, i.e., have different coefficients of absolute risk aversion in EU or different coefficients for the parameter guiding the probability distortion function in DT; and (iii) consumers can have different considerations sets, i.e., the sets of alternatives consumers consider before making purchase decisions. Using this set-up, the authors lay out sufficient conditions for semi-parametric point identification in the EU and DT decision frameworks. From an empirical perspective, the most important requirements for the applicability of their findings is access to data on consumer choices in two distinct contexts, e.g., data on consumers’ choices of two different deductibles within the insurance context, and access to all prices for both contexts, i.e., data on prices of chosen and not chosen deductibles for both contexts.

My comments cover the importance of accounting for limited consideration in empirical work, discuss reasons for consideration in the context of this paper, examine empirical results, and make suggestions for future research.

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1 Importance of Accounting for Limited Consideration

Limited consideration matters. Consideration sets matter because of their prevalence and their effects on market outcomes.

There is ample empirical evidence that consumers rarely make purchase decisions from the complete set of available products. Across a variety of products, markets, and industries, researchers have documented the existence of consumer consideration sets over the last decades. Furthermore, consumers’ consideration sets are typically small: they usually contain two to four products.

Not accounting for consumers’ consideration sets, i.e., incorrectly assuming that consumers take all available products into account when making purchase decisions, results in biased preference estimates. Since preference estimates are used to calculate elasticities and make predictions for other economic quantities of interests, such as competition or consumer welfare, biased preference estimates might result in the wrong conclusions. This point has been consistently made by prior research studying consumer consideration sets. For example, Honka (2014), Koulayev (2014), and Moraga-González, Sándor, and Wildenbeest (2022) show how not accounting for consumers’ limited information biases price elasticity estimates. Hortaçsu and Syverson (2004), Honka (2014), and Gaynor, Propper, and Seiler (2016) demonstrate how not taking consumers’ limited consideration into account changes welfare implications.

1 Throughout the economics and marketing literature, consideration sets have also been called “search sets,” “evoked sets,” or “(endogenous) choice sets.”


3 For example, consumers’ average consideration set sizes are 2.4 for auto insurance (Honka 2014), 2.8 - 6.4 for digital cameras (Bronnenberg, Kim, and Mela 2016), 2.5 for savings accounts (Honka, Hortaçsu, and Vitorino 2017), 2.3 for online used cars (Gardete and Hunter 2020), 1.4 for cosmetics (Morozov et al. 2021), 1.1 for new car purchases (Yavorsky, Honka, and Chen 2021), 1.7 for home improvement products (Amano, Rhodes, and Seiler 2022), and 1.9 for shoes (Zhang et al. 2023).
Despite ample empirical evidence of the importance of accounting for limited consideration, most applied research still maintains the assumption that consumers take all available products into account when making purchase decisions. This practice is partially driven by researchers not always having data on consumers’ consideration sets. Therefore, Barseghyan and Molinari (2023) (together with the prior articles in this series of papers) provides an important contribution on how to account for / estimate consideration sets when inferring demand for risky products in a setting in which data on consideration sets is unavailable.

2 Reason For Limited Consideration

The authors remain mute about the reason for consumers’ limited consideration in their article. Classic marketing literature has suggested that consideration sets are driven by firms’ marketing activities, such as advertising or promotions (see, e.g., Allenby and Ginter 1995, Andrews and Srinivasan 1995, Bronnenberg and Vanhonacker 1996, Ching, Erdem, and Keane 2009, Van Nierop et al. 2010). This view was also picked by Goeree (2008) in which consideration sets are driven by advertising. Another (newer) stream of literature in both marketing and economics has viewed consideration sets as the outcome of a search process. Typically, consumers are assumed to have uncertainty about a product characteristic (e.g., price or match value) prior to searching. Because search is a costly activity (due to opportunity cost of time, psychological cost, etc.), consumers only search a subset of available products which form their consideration sets (see Honka, Hortascu, and Wildenbeest 2019 for a detailed overview).

Recall that the model is set up to allow researchers to estimate demand with data from one company. In the model, consumers know their type (EU or DT), their preferences, and the prices for all alternatives in both decision contexts, i.e., have full information about all product characteristics. Given consumers’ perfect knowledge of their utilities for all options, search to resolve uncertainty about a product characteristic cannot be the reason
for consumers’ limited consideration.

As mentioned above, consideration sets have also been modeled as a function of firms’ marketing activities, e.g., advertising. While the authors estimate constant consideration probabilities, these could, in principle, easily be made functions of marketing activities. However, the data come from one company and consumers make decisions in two distinct decision contexts, e.g., two deductible choices for auto insurance. Firms’ marketing activities are unlikely to vary at that level: companies typically employ marketing activities at the brand or product level but not more granularly.

To sum up, the paper is more consistent with the consideration set than with the search literature. While it can describe consumers’ limited consideration, it cannot explain why consumers only consider a subset of alternatives. The reasons for limited consideration matter because inform the need for policy interventions and provide guidance for the most effective policy intervention.

3 Empirical Results

The authors apply their model and identification results to the estimation of preferences and the type share for consumers choosing levels of two deductibles (for collision and comprehensive auto insurance). Subsequently, the authors make counterfactual predictions for consumer welfare for the case that both collision and comprehensive insurance were to be combined into one coverage. The authors find that such an intervention has weakly negative effects under EU and might increase consumer welfare under DT.

The authors are careful in viewing this as an empirical application for illustrative purposes and this is a point that I would also like to emphasize. The data are over 15 years old and the auto insurance market has gone through several important changes: the internet has fundamentally changed the insurance shopping process, auto insurance companies now have less oversight and more freedom in setting prices, user-based insurance (UBI) using telematics
data is widespread, and autonomously driving vehicles are entering the streets. Additionally, the data are from one company. Customers vary across firms: e.g., some firms attract more price-sensitive customers, while other firms might attract more service-sensitive customers. Using data from one firm allows to infer preferences for that firm’s customers and make counterfactual predictions for that firm’s customers. However, other firms’ customers likely have different preferences and therefore predictions for these customers might be different. To put it differently, the empirical results are not representative of today’s market and auto insurance buying population.

To summarize, I agree with the authors that the change-in-welfare predictions should be viewed as illustrating the importance of a model that allows for different risk types and limited consideration, but not as providing substantial guidance on whether it would be beneficial for consumers if lines of coverage were to be combined.

4 Conclusion

Developing models and methods to account for consumers’ limited consideration in demand estimation when only data on choices is available is an important and growing area of research (see also, e.g., [Choi, Dai, and Kim 2018, Abaluck and Adams 2021]). It represents a valuable complement to the research that utilizes data on consumers’ consideration sets.

Based on my reading of the paper, I would like to make two suggestions for future work. First, the authors currently assume that, within a single context, the households’ ranking of alternatives is monotone in $\nu_i$ for $t_i = 1$ and in $\omega_i$ for $t_i = 2$ resulting in vertical differentiation of alternatives within each preference type. In empirical work, researchers often also worry about horizontal differentiation. Therefore, they usually include a vector of observable product or firm characteristics in consumers’ utility function and estimate heterogenous consumer preferences for these characteristics. Doing so would be especially important if the data under study contained insurance purchases from multiple firms instead
of one. However, the authors’ identification results do not hold in such specification. I encourage the authors to explore whether an extension in this direction is possible.

And second, Assumption 2.5 states that consideration sets are independently drawn conditional on $x_i$ and $\nu_i$ for $t_i = 1$ and $\omega_i$ for $t_i = 2$. From an applied perspective, this represents a strong assumption. For example, within the current model, I would expect that more risky consumers have smaller consideration sets. Within a more general model specification, such as the one discussed in the previous paragraph, I would expect consideration sets to be correlated with consumer preferences. I urge the authors to explore this avenue for future work.

Conflict of Interest Statement

I state that there are no competing interests to declare.
References


