Disentangling the Impact of Expert Product Ratings to Inform Market Strategies

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Description: *A robust analysis to discern the value of 1 expert rating point while accounting for rater quality and heterogeneity in ratings across raters.*

EXTENDED ABSTRACT

Research Question

Products and services are extensively reviewed by consumers and product specific experts in the marketplace. Expert reviews and ratings have been found to be more effective than user reviews in increasing purchase consideration for rated products, particularly in the case of experience goods where consumers determine quality of product after consumption. However, investigations into the impact of expert ratings on product demand have produced varying and inconsistent results. Prior investigations have primarily concentrated on understanding the impact of a rated product or average of rating scores on product demand. In the retail environment, a product can receive multiple expert ratings at different points in time with each rating having a different impact on rated product demand based on when they appeared. Moreover, there exists heterogeneity in the quality of ratings provided by experts leading to quality-tiers within experts. Hence, each expert who is rating, the corresponding rating score and contrasting quality grades emanating from multiple rating scores can have differential impact on the demand of the rated product—issues which have not been investigated in research preceding this study. We, through this research, seek to identify the impact of a single rating score on the demand of the corresponding rated product. We also seek to discern the impact of rating score based on when they were given and the quality tier of the expert reviewer. Also, it encapsulates the impact on demand from different signals emanating from quality grade changes between two consecutive ratings.

Method and Data

Our investigation is made possible by employing a rich data set of weekly sales data of rated and unrated wines—tracked at the SKU level—from a prominent Western New York wine retailer. The wines are rated on a scale of 0–100 by a host of independent expert reviewers of varying quality tiers using the Robert Parker rating system. The ratings are dispersed by the retailer to the consumers by showcasing them on the shelves adjacent to the product as and when they are made available by the expert reviewers. Since in this industry the wines are sold by retailers before they are rated by the experts in the field, for each rated wine we have SKU-level weekly sales data before and after the ratings start appearing for the wine. The disbursement of ratings across multiple weeks allows us to disentangle the incremental impact of each rating on the demand for the rated product based on the position of the rating and the quality of the reviewer as well.

The SKU classification of a wine is based on the uniqueness of product identification characteristics (country of origin, appellation, grape type) and vintage year. Using propensity score matching (PSM) techniques we identify corresponding unrated wines for a rated product. We also make sure that the unrated wines are sold concurrently with the corresponding

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rated product in the group. We end up with 128 groups of treated and untreated wines. To effectively discern the impact of expert information impacting demand while controlling for product quality, like prior studies, we have also employed difference-in-difference (DID) approach with treated and matched control entities.

Summary of Findings

In order accurately discern the impact of ratings and the impact of tier and crossover effects we calculate the associated elasticities from the estimated parameters. An average rating of 84 can increase the volume sold for the rated wine from anywhere from 10.13% (if the wine got a single rating of 84) to 35.76% (if the wine was rated 84 by all 5 ratings expert). Ratings have variable impact based on the position of the rating. An average rating of 84 increases the volume sold by 10.132% when it appears as the first rating. The impact diminishes as we move from the first rating to the fifth rating (2.22%) the wine received. The impact of a high tier expert can range anywhere between 2.203% and 6.263% based on when the high tier rating appears. It is interesting to note that a high tier second rating for the wine has the maximum impact of increasing volume sold by 6.263%. Since there are three high tier evaluators in our sample the highest impact that their rating of 84 respectively for a wine can have is 35.76% (when they are displayed sequentially as the first, second and third rating) and the least impact that they can have is 27.61% (when they are displayed sequentially as the last three ratings). A high tier fifth rating for a rated wine has no significant impact in increasing the volume sold. Hence, a single high tier rated wine with the rating being presented as the fifth rating will have the same impact in increasing sales as a rated wine with no high tier rating (21.35%).

Key Contributions

Our study is the first of its kind to discern the impact of expert ratings and quantify accurately impact of a single rating point based on the quality tier of the expert and also based on when it appeared. We assert that dissemination of expert ratings can be strategized by retailers to influence demand for the rated product. Such an approach can be used to study the adverse impact of fake reviews and ratings on products as well. We make a case that even with limited expert reviews substantive increases in demand for a product can be achieved. Ratings emanating for the top tier experts provide an additional bump to sales of the rated product. Our findings indicate that retailers can maximize demand for the rated product by disseminating ratings by top tier raters first followed by ratings from others. Retailers should be prepared for ratings dip if there are low level cross-overs from previous rating to the current. A better assessment of optimal expert review dissemination strategy can be arrived at by conducting simulation scenarios.

References are available on request.