

A Semi-parametric Approach to Analyzing Differentiated Agricultural Products

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Hedonic models are commonly used to quantify the value of characteristics implicit in a product's price. However, when products are substantially heterogeneous, using traditional parametric methods may not provide accurate estimates of marginal valuations of a product's characteristics. We propose using a quantile regression framework for estimating the value of characteristics in differentiated products. Semi-parametric quantile regressions allow the data to flexibly identify and estimate heterogeneous marginal valuation effects across a conditional price distribution. Using purchase price data from a bull auction, we show that complementary non-linear relationships exist between perceived quality differences and bull carcass and growth traits. Improved precision in understanding consumer valuation of product characteristics across differentiated market segments can help producers tailor products to each segment.

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