

pointofview

Big Data, Product Reviews and Behavioral Economics

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Ipsos Marketing

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In today's hyper connected world, consumers have the opportunity to review products, services, retailers and just about anything and everything. If we need an opinion of something, it likely exists online. Websites such as Yelp, Trip Advisor and Amazon have given consumers a platform to share their feedback quickly and easily. These reviews are important to marketers because consumers trust and use them as an input into the purchase decision process. In short, they have a real impact.

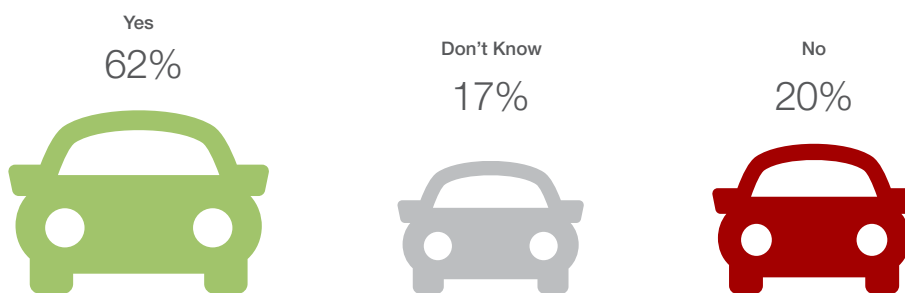
Tellis and Tirunillai (2012), for example, showed that online product reviews of personal computers, cell phones, smart phones, footwear, toys and data storage products predicted the stock market performance of 15 firms.

In this paper, we share how we can mine online car reviews and, through the lens of behavioral economics, provide insights into consumers' perceptions and emotions surrounding automotive. We analyzed a total of 7,000 online automotive reviews across six countries (Australia, New Zealand, US, Canada, UK and Ireland) for the last ten years (2005 to present). The reviews were subjected to text analysis and other statistical analyses. Our goal was to understand consumers' perceptions and emotions of various car brands and manufacturers across these countries. More broadly, we wanted to illustrate how mining online consumer generated content can be a powerful tool in the market research arsenal. We share only the key findings in this paper.

It's Not Just About the Car!

Reviews were both positive and negative, but most skewed toward the former. For example, when reviewers were asked whether they would repurchase the car again, 62% indicated "Yes," 20% indicated "No," and 17% answered "Don't Know." This finding corroborates with our experience when analyzing verbatim from open-ended questions in concept and product studies: People generally report more positive than negative feedback. The lower proportion of negative information means negative reviews will be more salient (relatively speaking) and hence more informative to people who read these reviews.

Figure 1. Percentage of Reviewers Who Would Re-Purchase the Same Car



We share a sample of key positive and negative reviews in Figure 2 below. It is noteworthy that 36% of the comments were negative feedback about the dealer and how they dealt with car problems. Even though the online data was collected for car reviews, a third of the reviews were about the dealer and how they handled car problems. The evaluation of a car, therefore, is more than just the experience of the car per se. It includes touchpoints that come with the maintenance and repair of a car and this is usually through the automotive dealer. We will see shortly that consumers' experiences with a dealer impacts not just how they perceive the dealer, but also the car brand itself.

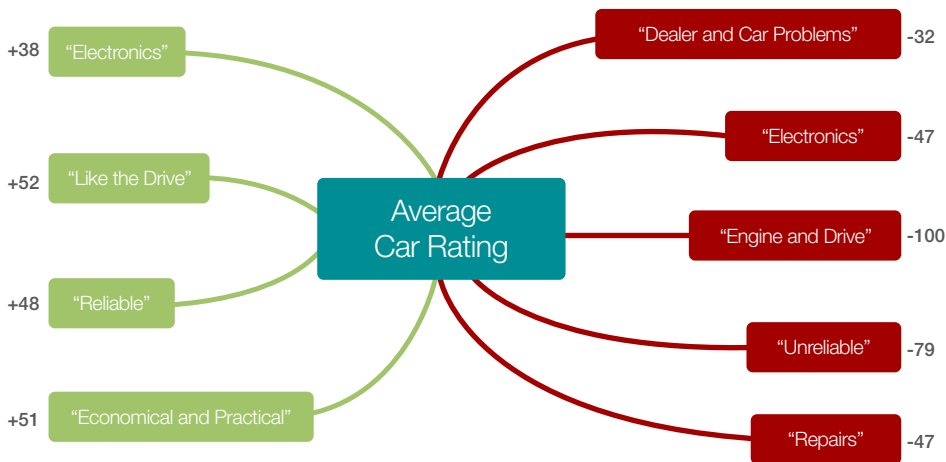
Figure 2. Key Positive and Negative Themes



Bad Is Stronger Than Good

Even though there were fewer negative reviews overall, these reviews had a disproportionate impact on the overall rating of the cars. When a theme was present in both positive and negative form, negative reviews had a larger impact than positive reviews on consumers' overall car rating. Figure 3 shows the key themes shared earlier, but with the relative impact of each theme on consumers' overall car rating added. The numbers in Figure 3 are indices with 100 representing the theme with the largest impact. "Engine and Drive" had the largest (negative) impact on consumers' rating and was assigned the number "-100." The impacts of the remaining themes were then indexed to "Engine and Drive."

Figure 3. Impact of Key Themes on Overall Car Rating



Looking at the themes for electronics and reliability (each of which was available both in positive and negative forms), we see that negative reviews had a larger impact than positive reviews on overall car rating. For example, while positive reviews on “Electronics” had an impact of “+38,” negative reviews on “Electronics” had an impact of “-47.” In other words, good electronics delight consumers but bad electronics annoy consumers to a greater extent.

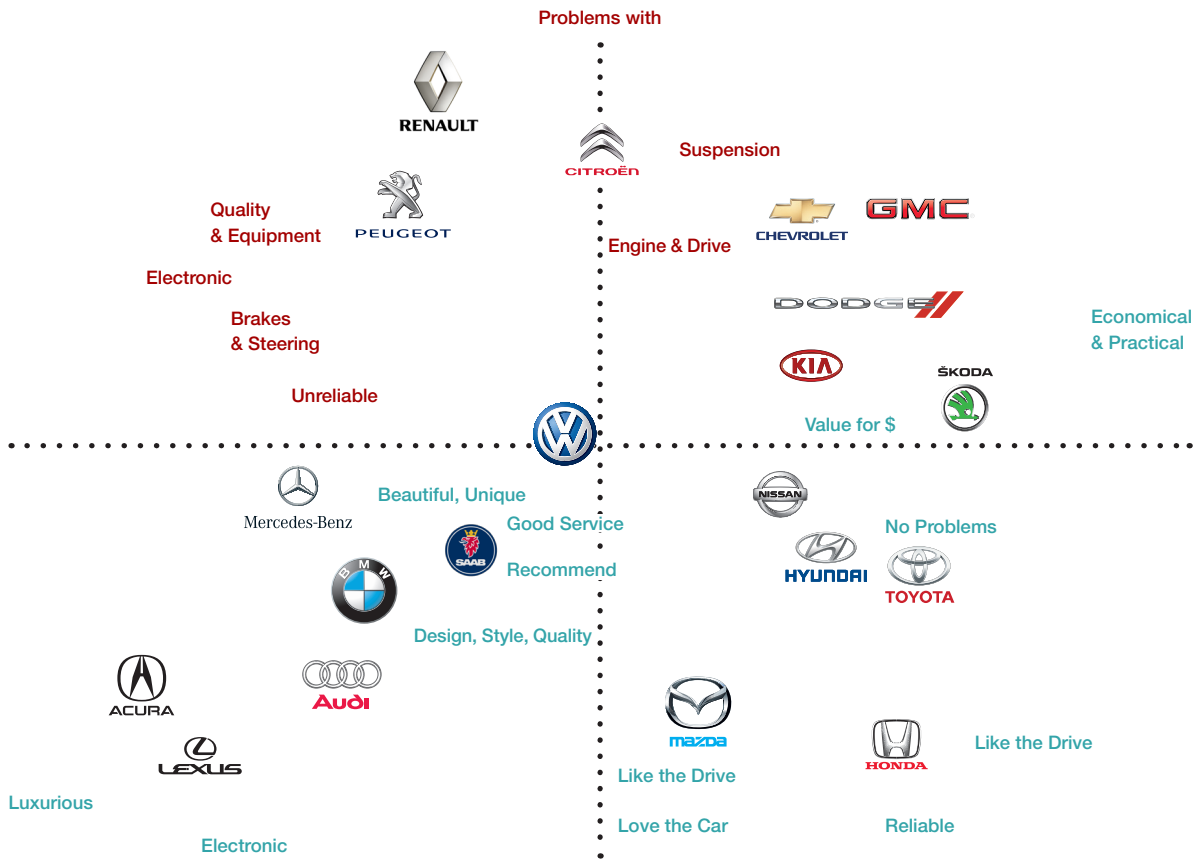
These findings are consistent with behavioral economics principles—that negative events have a larger impact than positive events. Evolutionarily, our brains are hardwired to pay attention to negative events. This ensures our survival. The greater impact of negative information is also true from the perspective of people who read reviews online. A negative review is likely to have more impact than a positive review, and this is why many companies have dedicated customer satisfaction teams to respond promptly to such reviews. The expense of such teams are well justified given the disproportionate impact on the customers and also other people who read the reviews.

It is also worth noting that while the negative impact of “Dealers and Car Problems” is the smallest (-32), its impact is almost as large as the impact of positive feedback on “Electronics” (+38). Consumers’ experience with the dealer at resolving car problems has an impact on their perception of the car and this impact is almost as large as how well the car’s electronics wow consumers. While it may be traditional wisdom that the dealer is inextricable from the car, what is new here is the quantification of the relative importance of vehicle properties vs. sales and servicing experiences.

How Do You Compare?

The product reviews provide more than insights into the perceptions of individual car brands. Analyzing all the automotive brands simultaneously allowed us to create a market landscape. Our analyses revealed four groupings of car brands (see Figure 4). In the bottom left quadrant, the “luxury” car brands cluster together and are viewed as luxurious, possessing good electronics, having beautiful designs/style and good service. In the bottom right quadrant, we see a grouping of mid-tier Japanese car brands associated with reliability and absence of problems. In the upper right quadrant, we have a lower price tier grouping made up of Kia, GMC, Skoda and Chevrolet. And finally, in the upper left quadrant, we see the clustering of three European cars that are associated primarily with problems. Market landscape helps manufacturers answer two primary marketing questions: 1) Who do I compete with, and 2) How do I compete better?

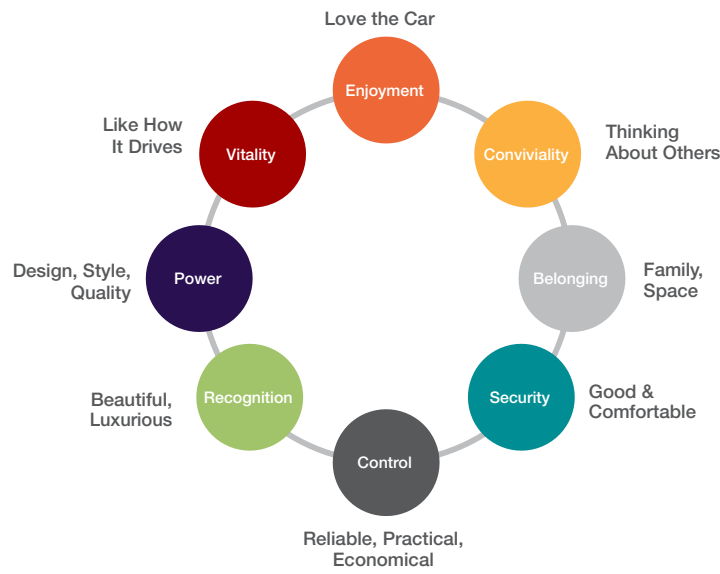
Figure 4. Market Landscape of Car Brands



How Do You Feel About Your Car?

Car ownership is laden with emotions. We purchase cars that reflect who we aspire to be and perhaps even express our values. Online reviews of cars provide more than feedback on functional qualities. They also give us a way to understand the deep emotional connections consumers have with their cars. Using Ipsos' emotional framework as a lexicon, we coded the reviews from consumers into eight emotions. The eight emotions are shown in Figure 5 along with the specific feedback used to define each emotion.

Figure 5. Emotional Lexicon

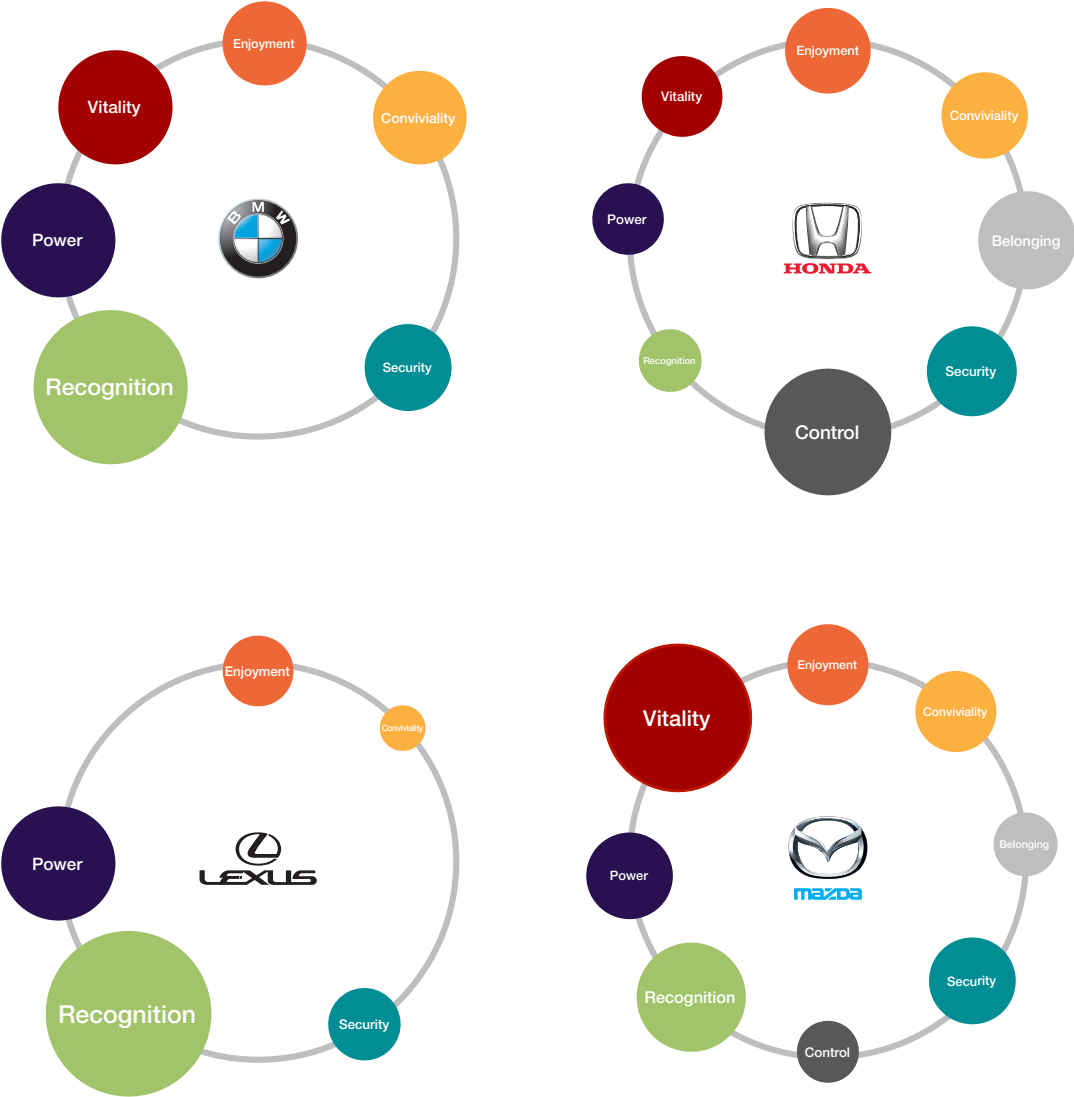


We illustrate our findings with two luxury brands, Lexus and BMW, and two more mainstream brands, Mazda and Honda. On the surface, Lexus and BMW seem similar. Both are considered expensive luxury cars. Our emotional framework, however, allows us to see the nuances of the two brands, as seen in Figure 6. Even though they share the Power emotion (i.e., design, style and quality), the Lexus brand is higher on Recognition (i.e., beautiful, luxurious) whereas BMW is higher on Vitality (i.e., the excitement of the drive). These findings reflect Lexus and BMW's positioning successfully conveyed by past marketing campaigns, for example, "The Pursuit of Perfection" and "The Ultimate Driving Machine."

Turning to the two mainstream cars models, we observe that Mazda shares the Vitality emotion with BMW. Mazda's focus on the driving experience via its "Zoom Zoom" and "Driving Matters" marketing campaigns appear to have succeeded in bringing this message home. So, while Mazda clearly lacks the Power and Recognition of BMW, it has succeeded at positioning itself on the driving experience. Finally, we see that Honda stands out primarily on Control through descriptors like reliable, practical, economical, but also on Belonging, Security and Conviviality. The reliability of Honda cars together with the more socially oriented emotions appear to be of greater importance among its purchasers.



Figure 6. Emotional Profile of Four Car Brands



Conclusions

Online car reviews allow us to achieve greater insights into consumers' perceptions, emotions and what is important to them. While our source was "Big Data," which is often thought of as devoid of emotions, we were able to glean insights into emotions by framing the analysis around an emotion framework. This is critical, as while we may be in the midst of a technological revolution, it is ultimately emotions that drive purchases. Big Data gives us the opportunity to understand people better but we have to apply the right framework to extract insights.

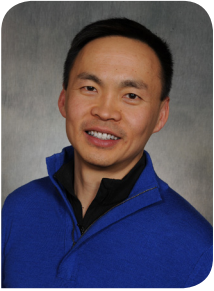
We have also shown how we can use behavioral economics to interpret "Big Data." Using the fact that people are hardwired to pay attention toward negative information, we were able to show the disproportional impact of negative information on people's evaluation of cars. We also understood behavior in a larger context by observing that a car's evaluation is dependent not just on its performance, but also on the performance of car dealers when it comes to car maintenance and service support.

In conclusion, technology has changed the way consumers talk about brands or products. Online product reviews is essentially the new word of mouth. The great news for manufacturers and market researchers is that brand chatter is now accessible to us and not just a fleeting ephemeral conversation. By using online product reviews/ social listening data and text analysis, we can now capture and analyze brand chatter. These techniques add to our existing arsenal of market research tools to understand the consumer and provide an immediate pulse into a product or brand's performance. Combined with other more traditional data sources such as survey data, Big Data allows us to have a more complete picture of consumer behavior.

Appendices

Tellis, G.J & S. Tirunillai (2012). Does Chatter Really Matter? Dynamics of User-Generated Content and Stock Performance. *Journal of Marketing Science*, Volume 31, pp 198-215.





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