

Social media can help auto manufacturers find vehicle defects, researchers say

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A motorist posts a message on Facebook about being towed after her car breaks down.

Can social media postings by consumers be a source of useful information about vehicle safety and performance defects for automobile manufacturers?

Yes, say researchers at Virginia Tech's Pamplin College of Business who conducted what is believed to be the first large-scale case study

confirming the value of social media for [vehicle](#) quality management. The researchers developed a computer-based information system that provides auto manufacturers an efficient way to discover and classify vehicle defects.

"A lot of useful but hidden data on vehicle quality is embedded in social media that is largely untapped by auto manufacturers," said Alan Abrahams, assistant professor of business information technology, who led the study together with Weiguo Fan, professor of accounting and information systems.

Abrahams said consumers rely heavily on the Internet for information about automobile safety and reliability, looking up vehicle consumer surveys, insurance industry statistics, manufacturer websites, and complaints filed with regulatory agencies. But in addition to being consumers of safety and reliability information, he said, automobile users are also producers of such information, using traditional Internet media (such as emails or online forms) and, increasingly, social [media tools](#) (such as bulletin boards, blogs, and Twitter).

Whether in public discussion forums, social networks, product reviews, visitor comments, wikis, or user-written news articles, user-contributed content is characterized by variable quality, said Fan.

It is, however, a daunting challenge for firms to process the "unstructured and dynamic" content of social media in order to detect the useful nuggets on vehicle defects that are buried among millions of unrelated or immaterial posts. So Abrahams and Fan sought to understand and prioritize the vast volume of consumer-produced automotive information and to ferret out and analyze the safety and performance issues.

Analyzing online discussion forums for owners of Honda, Toyota, and

Chevrolet vehicles, the researchers developed and tested a decision support system that can be used to discover vehicle defects from social media posts across multiple automotive brands. (A decision support system is a computer-based information system that helps managers make decisions.)

"Vehicle quality management professionals would greatly benefit in terms of productivity by employing a vehicle defect discovery system like ours to sift defects from unrelated posts," Abrahams said.

Read more about the study by Abrahams and Fan on mining [social media](#) for vehicle defect [information](#), to be published in the *Decision Support Systems* journal, and why conventional sentiment analysis is a poor indicator of auto defects in the fall 2012 issue of Pamplin magazine.

More information: www.magazine.pamplin.vt.edu/fall12/index.html

Provided by Virginia Tech

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