

# UNDERSTANDING CUSTOMER SENTIMENT

## FOR A MAJOR INSURANCE COMPANY

Elder Research applied state-of-the-art text mining techniques to the problem of sentiment analysis. The solution focused on the entire survey text rather than limiting analysis to lists of positive and negative keywords. This approach more accurately identified important issues and ignored off-topic comments, leading to more focused action and improved customer loyalty.

### INDUSTRY

- » Insurance

### BUSINESS NEED

- » Improve customer service by focusing resources on customer survey comments that provide actionable business insight

### SOLUTION

- » Used advanced text mining to highlight the most valuable customer feedback for focused action

### BENEFIT

- » Finely tuned analysis of customer sentiment resulted in improved customer loyalty

## THE CHALLENGE

Understanding the “Voice of the Customer” is necessary for responding to customer needs and improving service, but it can be difficult and time consuming to identify the most actionable feedback. This company utilized a customer survey that covered 11 different topics such as agency interaction and premiums. The customer survey data was a combination of demographic, geographic, and free-text data and was augmented with customer details including billing history and loyalty score.

## THE SOLUTION

Using training data to train a supervised model of text is the most effective way to extract value from survey responses. However, because the text data in every survey was different, training data could not be extracted from the survey results. To bridge this gap, Elder Research used a semi-supervised technique called agglomerative transduction. Because this technique required only a few labeled cases, the surveys could be evaluated like a fully supervised model. This enabled comments to be assigned to a set of known, specific categories. Best-practices were used for creating features from the text, including multi-word phrase detection, synonym detection, and entity extraction. This approach was then combined with structured data to create a loyalty score based on the survey text comments.

## RESULTS

The semi-supervised approach provided the benefits of full model evaluation using only a fraction of the time. The major benefit of this approach was the ability to filter out off-topic comments, including negative comments regarding the survey itself. This led to more focused analysis of the comments that mattered.

## ABOUT ELDER RESEARCH

Elder Research is the U.S.’s leading consulting company in the science, practice, and technology of advanced analytics. We have helped government agencies and

Fortune Global 500® companies solve real-world problems across diverse industries by amplifying the productivity of their analysts.

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