

Project Proposal: Consumer Confidence

Social Computing

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What is consumer confidence?

Consumer confidence is the degree of optimism that consumers feel about the overall state of the economy and their personal financial situation. How confident people feel about stability of their incomes determines their spending / saving activity and therefore serves as one of the key indicators for the overall shape of the economy. In essence, if consumer confidence is higher, consumers are generally making more purchases, thereby boosting the economy. On the other hand, if consumer confidence is low, consumers tend to save more than they spend, prompting the contraction of the economy. A month-to-month diminishing trend in consumer confidence suggests that most consumers have a negative outlook on the current state of the economy and other related factors such as their ability to find and retain good jobs or the state of their investments.

How is consumer confidence calculated today?

A classic example of consumer confidence is the Nielsen Global Consumer Confidence Survey. Nielsen reaches out to more than 25,000 consumers in more than 50 countries throughout Asia Pacific, Europe, Latin America, the Middle East and North America to gauge their economic outlook, confidence in the job market, status of their personal finances, and readiness to spend. The survey sample has quotas based on age and sex for each country based on their Internet user demographics and is weighted to be representative of Internet consumers. Twice a year, the survey also includes questions related to consumer habits and opinions on a number of topics, ranging from climate change to online shopping to food safety.

What is the problem? Why do we want to solve the problem?

A study "FRONTIERS OF REAL-TIME DATA ANALYSIS" by Dean Croushore in 2009 says the current indices are essentially useless for forecasting Americans' spending

patterns. The two closely tracked indices -- from the University of Michigan and the Conference Board -- may reveal the mood of Americans when they are surveyed, but they don't actually predict whether people will spend more or less.

Moreover, the indices reflect the past. The current method of performing one-on-one interviews in person takes too much time, resulting in two possible directions: 1) a small sample size where the collected data is not representative of the overall population; 2) time constraints force the polling firms to shorten the number of questions resulting in data that does not cover enough material or scope.

What we really want are indicators that are collected in real-time and covered a wider spectrum of questions.

Why is the project considered social in nature?

It is more interesting (and perhaps more accurate) to gauge consumer confidence in real-time. Social media gathers information from across a larger population with readily accessible interfaces.

Social media provides a treasure trove of information regarding consumers' sentiments, and, moreover, it is perhaps more accurate since it can reflect consumers' true feelings, those not influenced by the pressure of being formally interviewed. Thus it is possible that social media content may be a more accurate and more efficient source of information for these consumer confidence indices.

What is the potential impact of this research study?

First of all, more accurate reading of consumer confidence allows the government to craft better policies to help those that are in need now. Secondly, social media could potentially become a public forum where people have a voice and a say about the direction of our government. Thirdly, this study could validate the method of using social media to study consumer trends. Finally, it has potential to put the traditional polling firms out of business (or turn them into expert social sentiment information miners).

How do you plan to study the problem?

Consumer surveys generally include about 50 questions that deal with topics as varied as refrigerator purchases to inflation. Consumers are asked a number of follow-up

questions, with a goal of understanding why they make certain financial decisions. The sentiment index is based on the answers to only five questions in the survey, including the consumer's view on their current financial situation and their future financial situation, their expectations about employment, and whether it's a good time to buy a major household appliance. A minimum of 500 telephone interviews are conducted each month, and scores are calculated based on the responses.

Instead of inquiring for answers to the surveys, we propose to search the web for answers based on a set of queries similar to those in the surveys, but tailored to the setting of social web media.

Potential sources of information include Facebook, Twitter, Tumblr, and Google Plus. Likely we will start with one or two of these or other social media sources

What are the steps required to find the solution to the problem? (Milestones)

- 1) Understand the existing and relevant consumer survey questions.
- 2) Refine and establish a hypothesis that we want to test or a particular question to answer, such as "does the social-media-derived consumer confidence index match the monthly indices provided by the traditional firms?" or "Does anonymity provide more truthful answers regarding consumer confidence?"
- 3) Develop tools for retrieving information from online social media such as Twitter and Facebook. Possibly look for other unconventional sources of information that are more relevant to our study.
- 4) Transpose the traditional survey questions into a set of queries that we want to search the online social media for.
- 5) Use the currently-accepted form of consumer indices as the control for our study, and determine the angle that we want to compare with the data that can be retrieved from the social media.
- 6) Develop algorithms for performing real-time (or near real-time) analysis of consumer confidence and/or consumer sentiment.
- 7) Develop/employ an information visualization tool that can display the analyzed data.
- 8) Validate our analysis technique with literature research of other existing social media studies.

- 9) Test our hypothesis. Determine if the results support our hypothesis or not, we will analyze the outcome. Does the outcome support our theory? Why or why not?
- 10) Either repeat the analysis to validate our testing methods or refine our hypothesis to dig deeper to the solution of our problem.

