What Members Really Feel About Your Credit Card

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Introduction

• Positive and negative experiences of current customers posted online generate impressions among prospective cardholders in the form of verbal evidence.

• Which aspects of a credit card garnered the most favor/negative impressions among the consumers.

• Financial Services companies can use this technique to know how their product is fairing in the market and based on public opinion can make business decisions to improve the flaws.

• Sentiment analysis can simulate word of mouth of millions of existing users about a credit card and know about the salient features.
Sample User Review

Chase Sapphire Preferred® Card

4.8 out of 5 stars
142 Reviews
FROM CARDHOLDERS IN THE LAST YEAR

5 stars: 87%
4 stars: 11%
3 stars: 1%
2 stars: 1%
1 star: 1%

Apply Now
Add Review

Additonal Ratings You Might Find Helpful

★★★★★ Mar 27, 2017

“Nice perks nice rewards for traveling.”

Kiefer1996 CARDHOLDER

Just got approved for $19,000 unlimited credit line. Four years ago my credit was below 600 when I started my business. I also have a Chase freedom for $7000 I also have the Chase late for $2000. Today my credit score is over 750. I have a Amex preferred card as well as a Capital One and the city double cash. Four years ago I started a secured card with Wells Fargo which now has $8000. Every time I had some extra money I put it on that card. I raised my credit score over 200 points in four years. Anybody can do it.
The reviews data has 21 different credit cards with around 5,000 user reviews. Generated two separate datasets as negative and positive reviews.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>LEVEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ID</td>
<td>This field represents the unique review number</td>
</tr>
<tr>
<td>CARD NAME</td>
<td>Text</td>
<td>This variable describes the name of the credit card</td>
</tr>
<tr>
<td>USER REVIEW</td>
<td>Text</td>
<td>This variable represents the actual credit card review posted by the user</td>
</tr>
<tr>
<td>USER RATING</td>
<td>Integer</td>
<td>This field has the user rating</td>
</tr>
</tbody>
</table>
Methodology

- The website www.creditkarma.com was used as the data source. 72 distinct credit cards having around 10,500 user reviews were identified.
- Using Python code, the web-scrapping was done in order to collect these user reviews.
- The scraped user comments were collected in the CSV format.
- Finally, the cleaned data (user reviews) was imported to SAS where different text mining techniques like text parsing, text filtering etc. were performed for sentiment analysis.
Text Analysis

We performed the project as 3 steps:

• Analysis of all the reviews to understand what users are talking about.

• Separating the reviews as positive (User ratings 4 & 5) and negative (User ratings 1 & 2) and then analyzing the reviews to get a better picture of the pros and cons of the credit cards.

• Sentiment Analysis of individual major credit card companies.
Text Analysis – Process Flow

Text Filter – Concept Link

- raise
- year
- increase
- high
- limit
- Low limit
- month
- High limit
- start
Rule Based Model

F_Target = U ::
  (OR
   "waste"
   (AND, (OR, "interest", "interest", "interest", "interest", "interest"), (NOT, (OR, "approves", "approver"), "joke")
   (AND, (OR, "customer", "customer", "customer", "customers"), (NOT, (OR, "greater", "greatest")
   (AND, (OR, "bad", "worse", "worse", "bad", "bad"), (NOT, (OR, "approving", "approver"), "a"
   "waste")
F_Target = P ::
  (OR
   (AND, (NOT, (OR, "cancelling", "canceled", "cancelling", "cancel", "canceled", "cancelle"), (AND, (OR, "loved", "love", "loving", "love", "loving"), (NOT, "waste")
   (AND, (NOT, (OR, "reason", "reason", "reason"), (NOT, "worth")), (NOT, (OR, "account"
Major Credit Cards

- **Customer Service**: Capital One, Chase and Discover have very nice Customer Service.
- **Application Process**: The Application process for a Discover card seems not so easy.
- **Balance Transfer**: Chase and Citibank offers Balance Transfer.
- **Approval**: Discover applicants have a very high and instant approval rate on the other hand Citibank seems to have a low approval rate.
- **Interest Rate**: Capital One credit card has a high APR and Citibank card has low APR rate.
Conclusion

• Customer reviews play an important role in determining the true perception of any product among the audience.
• This information can be leveraged by the credit card companies, banks and financial institutions to make better quality products.
• Concept links can be used to understand the association of one term with others.
• The raw data needs to be parsed and filtered before being analyzed.
• Credit card user reviews will be made available immediately after a user posts about the product.
• Similar kind of analysis can be done for other products across different industries.
Presenters

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