

# Standard Report: Sentiment

If you are using a **Textbox** and/or **Essay / Long Answer** question to collect open-ended responses in your survey, you can now leverage *Sentiment Analysis* in your Standard Report.

Alchemer uses Natural Language Toolkit (NLTK); specifically the Valance Aware Dictionary and sEntiment Reasoner (VADER) Sentiment Analysis Package<sup>1</sup> to analyze your respondents' text responses for sentiment. Once the text is analyzed, a sentiment score is stored. You can then add a Sentiment Element to your Standard Report to show the aggregate sentiment for a given compatible question in your survey.

## What is Sentiment Analysis?

Sentiment analysis<sup>2</sup> is the process of identifying (statistically) whether a piece of text is positive, negative, or neutral. In the case of Alchemer, the *text* refers to a respondent's answer to one of the compatible question types.

## Compatibility

*Sentiment Analysis cannot be performed retroactively. It is only performed on responses collected after the release of this feature.*

At this time, sentiment analysis is performed on English language surveys only. A sentiment score of 0 (neutral sentiment) will be returned for non-English open-ended responses.

Sentiment Analysis is not performed on responses collected via **Offline Mode**.

The VADER Sentiment Analysis Package is automatically run on open-ended responses collected via the following question types\*:

- Textbox
- Essay / Long Answer

If either of the above questions is included as a sub-question of a **Custom Group** question, sentiment analysis will also be performed.

### Limitations

1. The above question types will only be analyzed for sentiment when validation is NOT applied. If you are not sure what validation is, visit the [Validate Textbox Answer Formats](#) article.
2. Only the first 2500 characters entered will be analyzed.

## Sentiment Scoring

After a respondent's open-ended response is analyzed, a sentiment score is assigned to the

response. The score ranges from -1 to 1. Depending on the specific score returned, the sentiment will be categorized as one of the following:

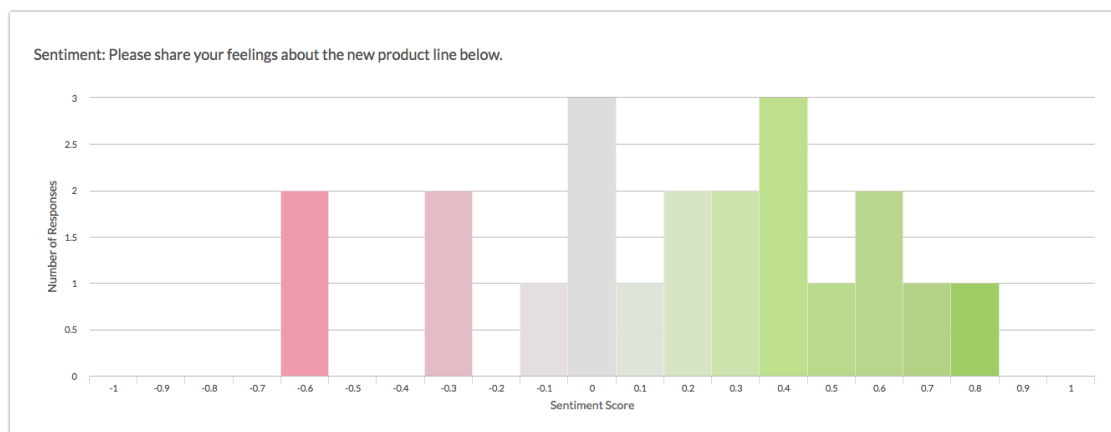
Negative Sentiment	Neutral Sentiment	Positive Sentiment
$\geq -1$ and $< -0.3$	$\geq -0.3$ and $\leq 0.3$	$> 0.3$ and $\leq 1$

## How is Sentiment Calculated?

Visit our Sentiment Analysis documentation to learn the ins and outs.

## Sentiment in the Standard Report

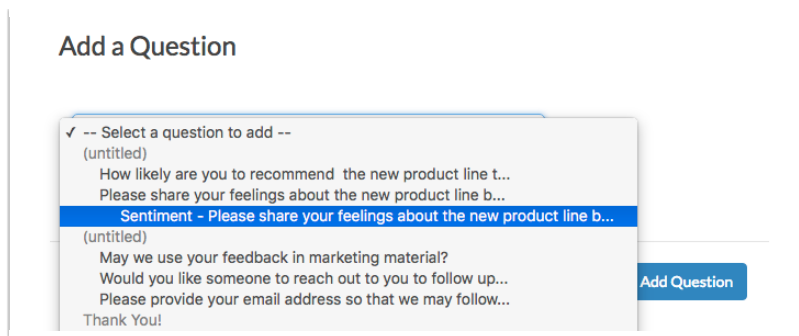
If your survey utilizes one of the question types that is compatible with Sentiment Analysis (Textbox, Essay / Long Answer), you will have access to a new Sentiment Question Chart reporting element within the Standard Report.



- The Sentiment element will display the sentiment score for the associated question on a scale of -1 to +1 (in increments of .1).
- The sentiment will be color-coded along a range from red (negative) to gray (neutral) to green (positive).
- Each individual score (x-axis) will display an associated response count (along the y-axis). The taller the bar, the more responses with that specific sentiment score.

## Add Sentiment Chart

1. To add a Sentiment Chart to your Standard Report, use the **Insert** tool between any two report elements.
2. After clicking Insert, choose the **Question Chart** option.
3. Locate the Textbox or Essay / Long Answer question for which you want to add a sentiment chart. Directly beneath the question, you will see an indented option that reads Sentiment - [Question Title]. Click on this option to select it.



4. Click **Add Question** to add the chart.

## Customize Sentiment Chart

After you have added a Sentiment Chart, there are a couple of things that you may want to customize.

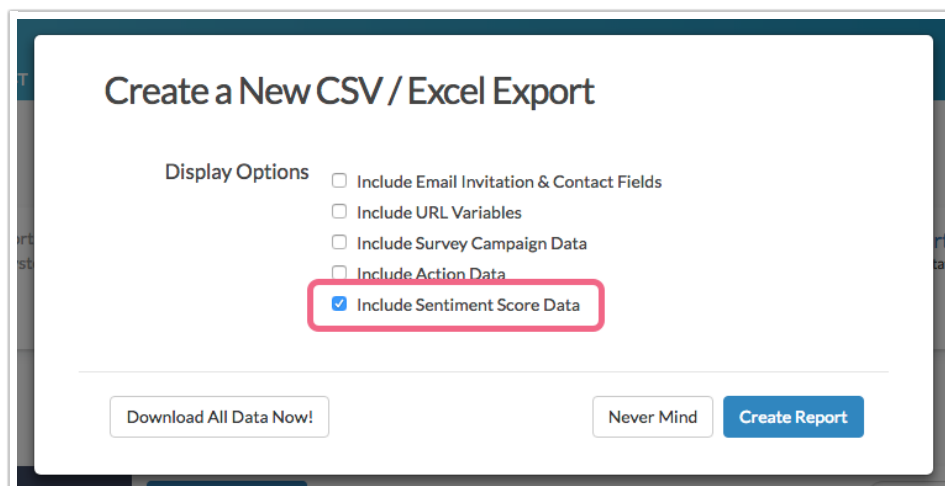
- Click the **Chart Type** link to the right of the chart to update the chart title. By default, the chart will be titled as "Sentiment: [Question Title]".
- Click the **Filter** tab to apply a filter to the Sentiment Chart. You can filter based on prior question answers as well as by link source, among other options.

Make sure to **Save** any changes that you made to the Sentiment Element.

## Export Sentiment Score

The sentiment score associated with each respondent's open-ended answer can also be included in a CSV / Excel Export of your survey data.

1. When you create an Export via **Results > Exports**, you will see a number of initial display options, including **Include Sentiment Score Data**.
2. Check the box associated with this option to include the sentiment score in your export file.



If a question is compatible with Sentiment Analysis, a **Sentiment** column will be included directly after the question, within your Excel file.

## Download Sentiment Score via Individual Responses

When you download an individual response to a PDF, you will have the option to include sentiment scores within the PDF.

On the **Customize your response PDF** screen, check the box associated with the **Include Sentiment Scores** option.

Customize your response PDF

PDF settings

- Include Details (Browser, Page Path, Session ID)
- Include Geo Data
- Include Internal Comments
- Include Sentiment Scores
- Exclude Questions Hidden From the Respondent  
Not Applicable to API and Offline responses.
- Use customized view
- Include text/instruction from survey
- Change PDF orientation to landscape

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If a question is compatible with Sentiment Analysis, the sentiment score will be included directly after the question, within your PDF file.

## Further Reading

- VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text
- VADER Sentiment
- VADER lexicon file
- VADER Sentiment Analysis Explained
- Using VADER to handle sentiment analysis with social media text

## Sources

1. Hutto, C.J. & Gilbert, E.E. (2014). VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text. Eighth International Conference on Weblogs and Social Media (ICWSM-14). Ann Arbor, MI, June 2014.

2. "Using VADER to handle sentiment analysis with social media text," Standard error, last modified April 08, 2017, <http://t-redactyl.io/blog/2017/04/using-vader-to-handle-sentiment-analysis-with-social-media-text.html>.

3. "VADER Sentiment Analysis Explained," DATA meets MEDIA, last modified April 10, 2017, <http://datameetsmedia.com/vader-sentiment-analysis-explained/>.

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