Part 1) Questions on textual analysis research / Referee Task

The provided paper on unionization is well written and closely follows the argument line of Loughran and McDonald (2011) as published in a recent and significant article in the field of textual analysis. Yet, individual steps may need further reviewing. In the following, we present a review of the main points and tasks and describe whether they are solid or can be disputed:

- The authors use Form 10-K quarterly filings and determine the percentage of sentences that discuss unionization and analyze the tone regarding <u>negative</u> words to gauge the management's views → I have no critique here as it seems to be standard practice in Financial Research to use these sources
- To understand the investor perspective, they regress abnormal returns around filing day against the percentage of unionization sentences. → Comparing inside <u>and</u> outside perspective on the company's performance, like in the Loughran and McDonald (2011) paper, is a good way to cross-check the findings with regard to external validity
- They only include firms with non-missing CRSP/Computstat data.
  - Even though the Loughran and McDonald (2011) paper also is limited to such companies, I find this to be a risky approach with regard to <u>selection bias</u>
- Pre-processing:
  - remove exhibits, HTML code, and tables → Even though that may be ok to do for a first analysis, I'd rather see how some information from these sources are included into the analysis. After all, every big company has good employment statistics (e.g., development of the work force over years) and that info may be hiding in plots and tables
  - transform to all lower-case → probably a **methodological error** as then sentence identification with "popular software packages" may be inhibited → Here, I would like to see how the analysis is influenced by the casing, or if it is robust against it
- Determining relationship with unionization
  - obvious keywords ("union", "unions", …) → ok
  - non-obvious keywords ("united", "workers", ….) → If all plausible "non-obvious" keywords are used, that seems like a good and solid approach
  - Inflections → Depending on what inflection/stemming approach is used, this may lead to difficulties with the vast amount of technical languages commonly used in 10-Ks → Maybe not an issue but something to maybe conduct a robustness check

   - Identification of sentences with popular software packages → not good as “popular software packages” are <u>not</u> optimized around financial language → some researcher use their own approaches here
   - Computation of negativity of union-related and non-union-related sentences → using negativity over positivity is good
- Statistics
   - Regress Cumulative Abnormal Return against measures above
   - Control for text-based measures (Fog Index) → good, should be used
   - Union-related negativity vs. uncertainty → How is uncertainty measured here?
   - Negativity is measured with dictionary of negative words by Loughran and McDonald (2011) → good approach, makes it comparable to other research projects
   - No measurement of positive words → good as positive tone is usually not a factor in finance
   - The shown tables are conceptually in line with the tables in Loughran and McDonald (2011) → good, but what new do we learn from it then? What is the research contribution?
   - As a rather large proportion of 10-K’s talks a lot about unions throughout time, the mere presence of the topic in a 10-K does not provide any new information in and of itself
- The observation that investors seem to not care about the topic of unionization in 10-Ks vs. managers who consistently view it bad goes against the **economic** “story” behind the research:
   - It seems as if investors expect unionization to be a topic across all companies and therefore this topic does <u>not</u> provide any meaningful insight in terms of a investment decision
   - If investors cannot exploit this information for profit, what is the practical implication of the research findings? If any?
   - The author say that themselves: “we find a significantly negative relation between readability and investors’ response indicating that investors prefer annual reports that are well written and easily understood”
   - A research paper still needs a “good story” to get published. This seems to <u>not</u> be the case here!
   - “might be explained by the sample period” => Sounds like a weak excuse to me
   - “For completeness, note that our result regarding the relation between uncertainty and filing CARs changes when we use the percentage of modal weak words instead of the

uncertainty words” → Sounds like “we keep picking new statistics until we find something significant”

- To me, that may be the biggest **methodological challenge**

Part 2) Interpretation: Discussing the Top10 Results in the original version

The first 5 ranks in the Top10 are all managers saying “good morning,” either generically in the call of to an individual person. Despite being upbeat when greeting other people, this answer has nothing to do with evaluating the financial performance of the company.

In general, one should probably filter out obvious “small talk” messages, maybe even messages regarding the conduction of the call (albeit these are probably formatted in a neutral way).

According to Loughran & McDonald (2011), “**negative** sentiment has a much bigger effect on liquidity than positive sentiment.” Further, questions regarding at “panic” should have a quicker impact on turnover or number of quotes in the market.

Loughran & McDonald (2016) find that as well: “firms with positive tone in the question-and-answer portion of the conference call experience significantly higher stock returns. Conversely, conference calls with negative tone, as measured by the Henry (2008) lists, have negative **abnormal** returns.”

From my perspective as a non-finance academic these findings make intuitive sense. While financial documents and communication are commonly written and expressed in a somewhat neutral tone, there should be a tendency of “good” managers to always have a positive sounding bias in their expression, rendering a positive tone less important when it comes to predicting financial performance.

In addition, managers may risk getting sued when being too negative publicly. So, this re-affirms the idea that probably most financial communication is biased toward a positive/neutral tone. Yet, if managers dare making negative comments publicly, they must be sure about the negative financial performance of the company.