Using Latent Dirichlet Allocation on Twitter data to gain insight in the behaviour and mindsets of young people in restrictive settings.

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Problem

- RNW writes about important and sensitive topics which young people in restrictive settings care about
- Costly supervised topic modeling for RNW media makers.
- Unseen topics by media makers should also be provided by content on the different platforms.

Approach

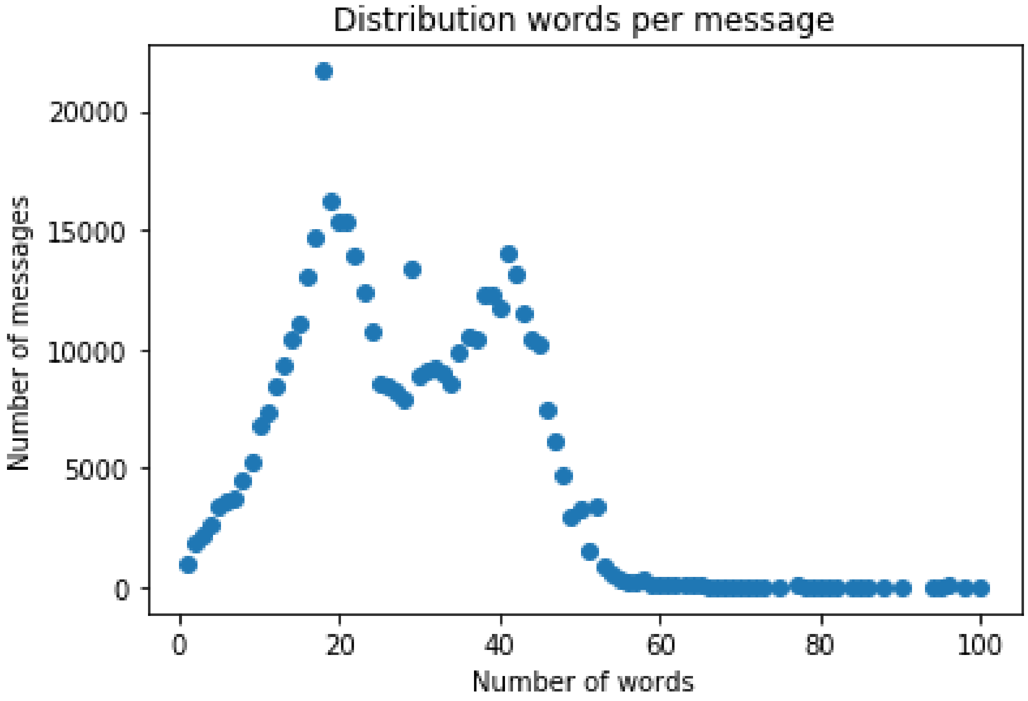
- Applying topic modeling on Twitter messages of the RNW Burundi Twitter platform.
- The assumption is that the topics will largely categorize and summarize what people of this platform talk about.

Subquestions

- How accurately can topic modelling be applied on Twitter data?
- What is the optimal number of topics that can be generated?
- Can LDA distinguish between Twitter message using hash-tags as true labels?

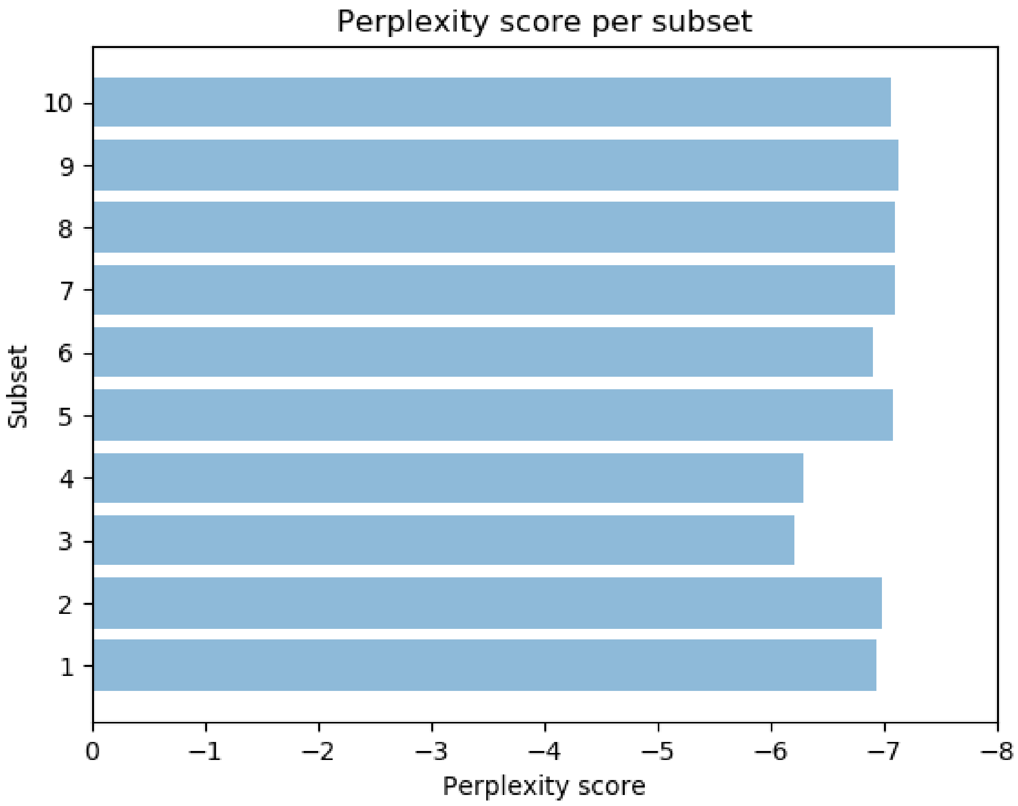
Dataset

- ~ 460.000 Twitter message and hash-tags
- RNW Burundi Twitter platform
- French, English and Rundi



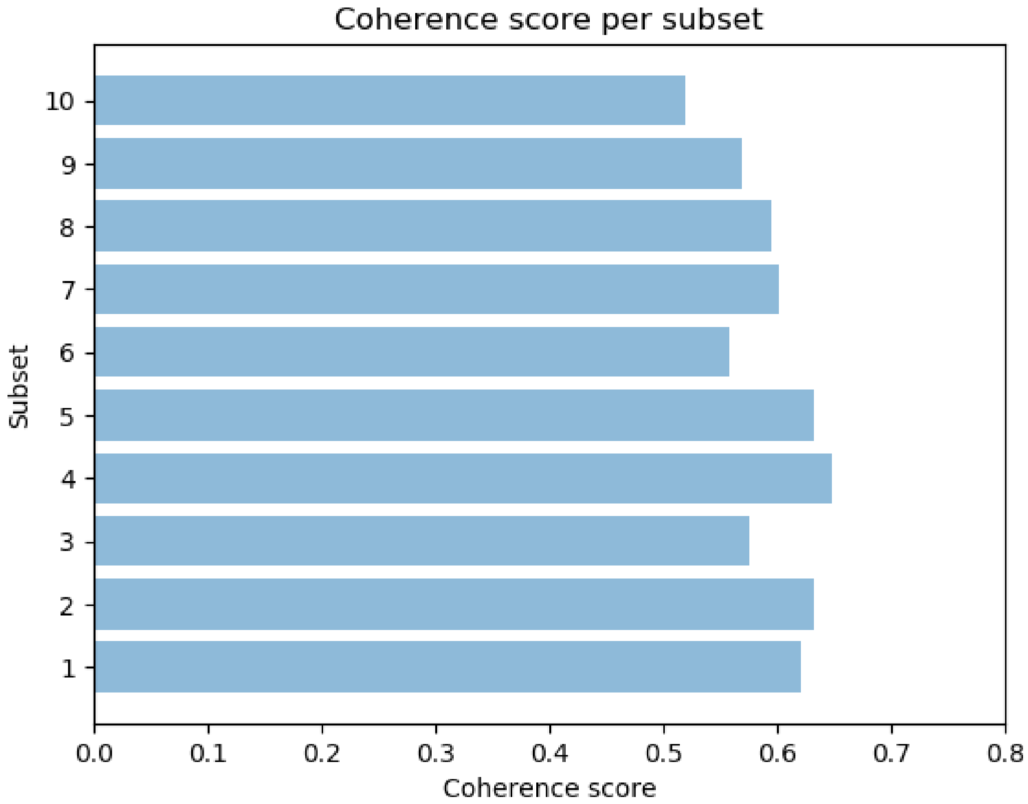
Subquestion 1

- Perplexity tested on subset of dataset
- The perplexity is performing stable between the subsets.
- Standard deviation of 2.87

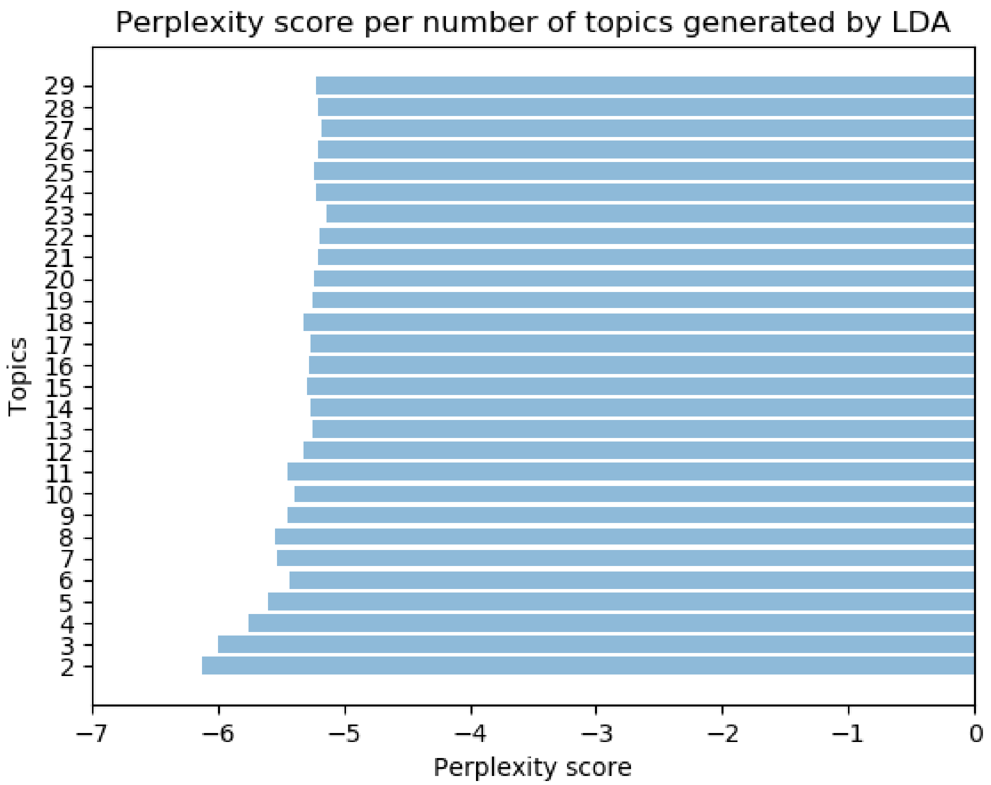


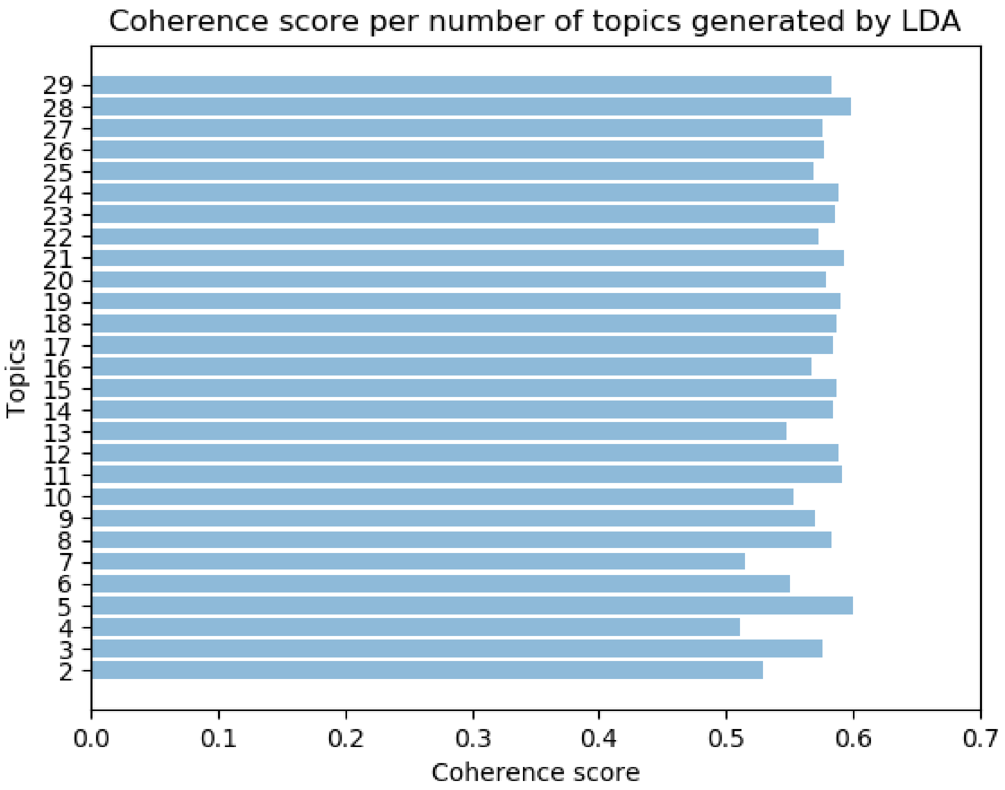
Subquestion 1

- Coherence tested on subset of dataset
- The perplexity is performing stable between the subsets.
- Standard deviation of 0.038



Subquestion 2





Perplexity optimum = 2

Coherence optimum = 5

Subquestion 3

- Can LDA distinguish between Twitter message using hash-tags as true labels?
- Are the message with in common hash-tag assigned to the same topic group?
- Important hash-tags will be selected.
- Accuracy will be used for evaluation.
- A LDA topic will be assigned to a hash-tag based on the biggest number labeled hash-tags within LDA topic.