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Relevance of Health-Related Hashtags on Twitter: A Text Mining Approach

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ABSTRACT

Intro:

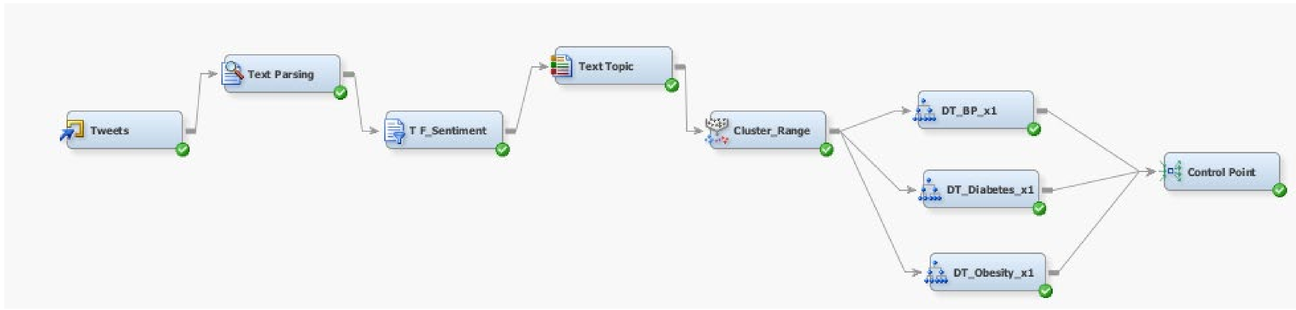
- Social media platforms facilitate user interaction and impact decision making.
- Users prefer to use hashtags while sharing posts.
- Knowing the sentiment towards **diabetes, bloodpressure, and obesity** is fundamental to understanding the impact of these information on patients and their families.
- The study seeks to determine the relevance of health-related hashtags on Twitter and analyze sentiments about diabetes, obesity, blood pressure.

Methods:

- Tweets retrieval using #Hashtags
- Overall 10,881 tweets retrieved
- 3 Analytical Approaches:
  - Text Topic Modeling
  - Clustering
  - Decision Trees (DTs)

Results:

- The important topics identified vary across clustering and DTs.
- Using '10 crossfold validation' for each DT with 'misclassification rate' demonstrated good accuracy



Topic Modeling identified multi-term topics of relevance to:

- Blood Pressure (BP)
- Diabetes
- Obesity

Clustering node captured broader range of topics as compared to each disease specific DT.

Health related information - checkups, remedies, prevention, surgical procedures are actively discussed on such platforms.

Important Topics for Clustering & DT

Clustering_ Range	DT_BP_x1	DT_Diabetes _x1	DT_Obesity_ x1
Diabetes-Nutrition	BP-Remedy	Diabetes-Nutrition	Healthcare-Burden
Diabetes-Risk-Woman	BP-Prevention	Different-Diabetes-Type	BP-Remedy
Health-Awareness	Lung-Accumulation	Diabetes-Checkup	Food-Prevent
Bariatric-Surgery-Woman	Food-Prevent	BP-Obesity	Lung-Accumulation

CONCLUSION

- Combination of different data mining and text mining approaches can enhance our understanding about hashtag relevance on social media platforms.
- It can thus increase our understanding about user engagement on such platforms and potentially help improve managing public health strategically.

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