HARNESSING SOCIAL MEDIA INSIGHTS FOR SUSTAINABLE VINE AND WINE MANAGEMENT: AN NLP-BASED ANALYSIS

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INTRODUCTION

Sustainability is increasingly relevant in the vine and wine ecosystem [public regulation, business strategies, markets and consumers].
Users [individuals/organisations/public agencies] generate relevant content about industries and markets in different formats and platforms, including vine and wine.
The rapid advancement of AI and Big Data has led to the development of highly sophisticated tools for analysing User Generated Content (UGC) and specialised wine-related media and applications. These tools have the potential to provide deep insights into consumer behaviour and preferences and industry and market dynamics.

UGC is particularly relevant because of its high volume, different formats [text, image, video, audio, AI-generated], different users [people, media, organisations, brands, influencers, public agencies …] and its real-time "pulse" of market dynamics.

So…

¿How can we build protocols to tap into UGC to unlock valuable insights about what sustainability issues dominate online conversations? ¿Can we identify "hot" themes/topics from these conversations? ¿How to integrate into marketing decision-making?

METHODOLOGY

Analysis of contents shared in X (Twitter) in text format
Queries about Wine + SUSTAINABILITY
English & Spanish
Data: JAN 2019- JULY 2024
67763 Tweets (only English)

Brandwatch
Query

We used unsupervised ML/NLP topic modelling methodology to extract topics from textual UGC data tweets
Latent Dirichlet Allocation (LDA) modeling
Stepwise data preparation [data cleaning > text tokenization > stopwords removal > lemmatization > LDA algorithm]

We used Gensim for LDA modelling and pyLDAvis for visualisation
Nine topics (themes) as a most effective solution [coherence scores and researchers' judgment]

RESULTS

Identified topics (based on the most relevant keywords)
1. Gastronomic Events and Sustainability in the Wine Industry
2. Sustainable and Organic Practices in Viticulture
3. Impact of Climate Change and Tourism on the Wine Industry
4. Innovation and Technology in the Wine Industry
5. Technology and Sustainability in the Wine Supply Chain
6. Sustainability in Packaging and Materials in the Wine Industry
7. Wine Promotion and Sustainability on Social Media
8. Artisanal Production and Ecological Practices in Local Viticulture
9. Sensory Experience and Promotion of Organic Wines
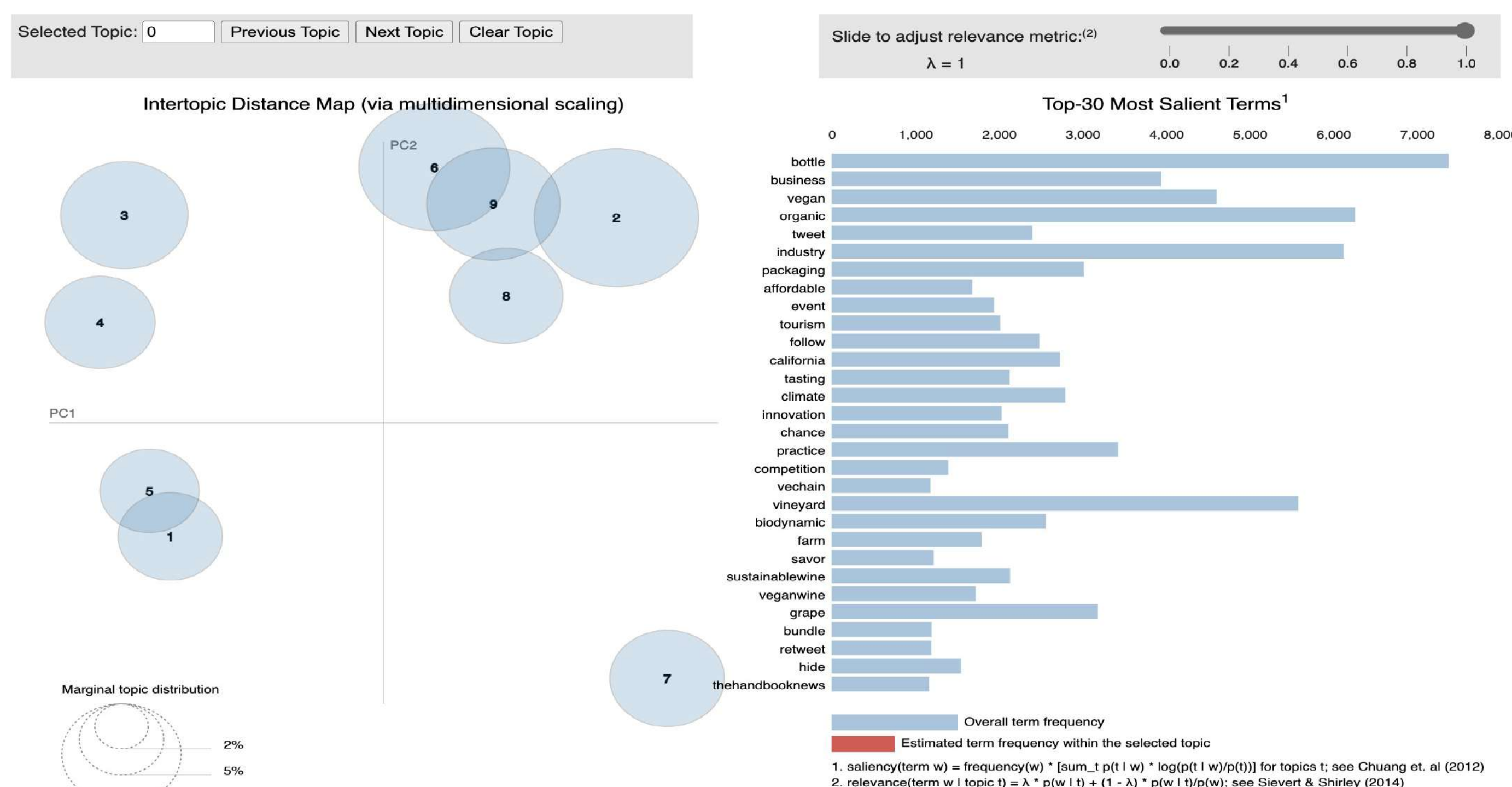
CONCLUSIONS

Sustainability as a multidimensional concept

Relevance of climate change in viticulture

Technology is an essential aspect of improving sustainability

Conscious consumption and new consumer behaviors (useful for market segmentation)

Sustainability dimensions as key marketing competitive differentiators

Opportunities in sustainable wine tourism

Adopting emerging technologies to improve efficiency and sustainability in marketing strategies is necessary.

Digital marketing and social media have emerged as relevant tools for the sustainable promotion of wine practices.