

ANNOUNCEMENT

Bachelor Thesis

KEYWORDS

- Dynamic Factor Analysis
- Entertainment Marketing
- Marketing Analytics
- Machine Learning
- Deep Learning

TOPIC: DYNAMIC FACTOR ANALYSIS FOR MARKETING ANALYTICS USING SOCIAL MEDIA DATA

The increasing availability of large data sets from social media networks (e.g., Facebook, Twitter, YouTube) provides opportunities for companies to better understand what factors contribute to the success of a brand. For example, entertainment companies (e.g., music labels) nowadays have access to a large number of social media metrics (e.g., likes, followers, comments) for their brand (e.g., music artists) that may serve as predictors of a brand's future success. However, including all possible social media metrics in a regression model is often not feasible due to correlation between the metrics. Therefore, the goal of this bachelor thesis is to empirically investigate the association between social media metrics by testing different methods to reduce the complexity of social media data (e.g., autoencoder or principal component analysis). In addition, the relationship between variables is unlikely to be static. Therefore, a dynamic factor analysis approach should be tested (e.g., using the [pcdpca package](#) in R) to uncover variation over time. The data set for this thesis comprises social media data from various networks (e.g., Twitter, Facebook, YouTube) for more than 1500 music artist and a period of more than one year.

LITERATURE:

- **Chapman, C. & McDonnell Feit, E. (2013):** *R for Marketing Research and Analytics*, Springer, pp. 195-223.
- **James, G., Witten, D., Hastie, T., & Tibshirani (2015):** *An Introduction to Statistical Learning*, Springer, pp. 373-401.
- **Tirunillai, S., & Tellis, G.J. (2017):** Does Offline TV Advertising Affect Online Chatter? Quasi-Experimental Analysis Using Synthetic Control, *Marketing Science*, 36(6), pp. 862-878.

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APPLICATIONS

Applications with CV and transcript of records should be sent to Christian Hotz-Behofsits (christian.hotz-behofsits@wu.ac.at).