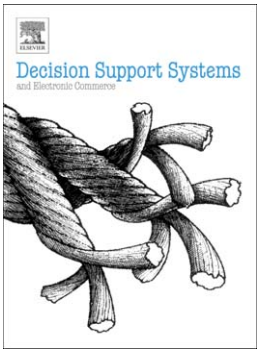


# Ranking of high-value social audiences on Twitter

Siaw Ling Lo, Raymond Chiong, David Cornforth

PII: S0167-9236(16)30021-5
DOI: doi: 10.1016/j.dss.2016.02.010
Reference: DECSUP 12692

To appear in: *Decision Support Systems*

Received date: 3 June 2015
Revised date: 28 January 2016
Accepted date: 22 February 2016

Please cite this article as: Siaw Ling Lo, Raymond Chiong, David Cornforth, Ranking of high-value social audiences on Twitter, *Decision Support Systems* (2016), doi: 10.1016/j.dss.2016.02.010

# Ranking of High-Value Social Audiences on Twitter

Siaw Ling LO*, Raymond CHIONG, David CORNFORTH

School of Design, Communication and Information Technology, The University of Newcastle, Callaghan, NSW 2308, Australia.

*Corresponding author.

*E-mail addresses:* siawling.lo@uon.edu.au (Siaw Ling LO), raymond.chiong@newcastle.edu.au (Raymond CHIONG), david.cornforth@newcastle.edu.au (David CORNFORTH)

**Abstract**

Even though social media offers plenty of business opportunities, for a company to identify the right audience from the massive amount of social media data is highly challenging given finite resources and marketing budgets. In this paper, we present a ranking mechanism that is capable of identifying the top-k social audience members on Twitter based on an index. Data from three different Twitter business account owners was used in our experiments to validate this ranking mechanism. The results show that the index developed using a combination of semi-supervised and supervised learning methods is indeed generic enough to retrieve relevant audience members from the three different datasets. This approach of combining Fuzzy Match, Twitter Latent Dirichlet Allocation and Support Vector Machine Ensemble is able to leverage on the content of account owners to construct seed words and training datasets with minimal annotation efforts. We conclude that this ranking mechanism has the potential to be adopted in real-world applications for differentiating prospective customers from the general audience and enabling market segmentation for better business decision-making.

**Keywords**

Ranking, Audience segmentation, Social audience, Ensemble learning, Twitter

## 1. Introduction

In this age of information overload, the ability to identify relevant content in a timely manner will help both consumers and business entities in their decision-making processes. This is especially so when a company wants to find potential customers or a target audience from the crowded social media space. While most companies have Twitter or Facebook accounts [1], it remains a challenge for