

# Fashionology: A Textual Analysis Approach of Understanding the Fashion Industry

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*A method of constructing a fashion influence network is proposed. The results show that in the fashion industry, being innovative doesn't necessarily mean being influential.*

## Introduction

- Existing research has proposed various theories, trying to explain how fashion works.
- Limited empirical research has been conducted to validate these conceptual models with real data.
- In particular, there has been no research investigating the relationship between innovation and influence.
- We propose a model of a fashion influence network using fashion runway reviews from Style.com.
- We derive implicit influence links from our design similarity model and construct a fashion influence network to examine the design innovativeness and influence relationships among fashion designers.

## Measuring Influence

### Data Source

- Style.com's fashion reviews are written in a very objective and descriptive manner.
- We use 6,180 runway reviews of 795 fashion designers across year 2000 to 2014.

### Fashion-related Noun Phrase Extraction

- We manually built a fashion taxonomy, which consists of 2,097 words, with 16 categories.
- The taxonomy achieves average precision of 95.08% and recall of 94.58% when tagging the unseen runway reviews.
- The fashion symbols we use are the 26,579 fashion-related noun phrases extracted from all the collected reviews, such as *pencil skirt*, *chiffon dress*, *wide-leg trousers*, *open back*.

## Fashion Influence Network

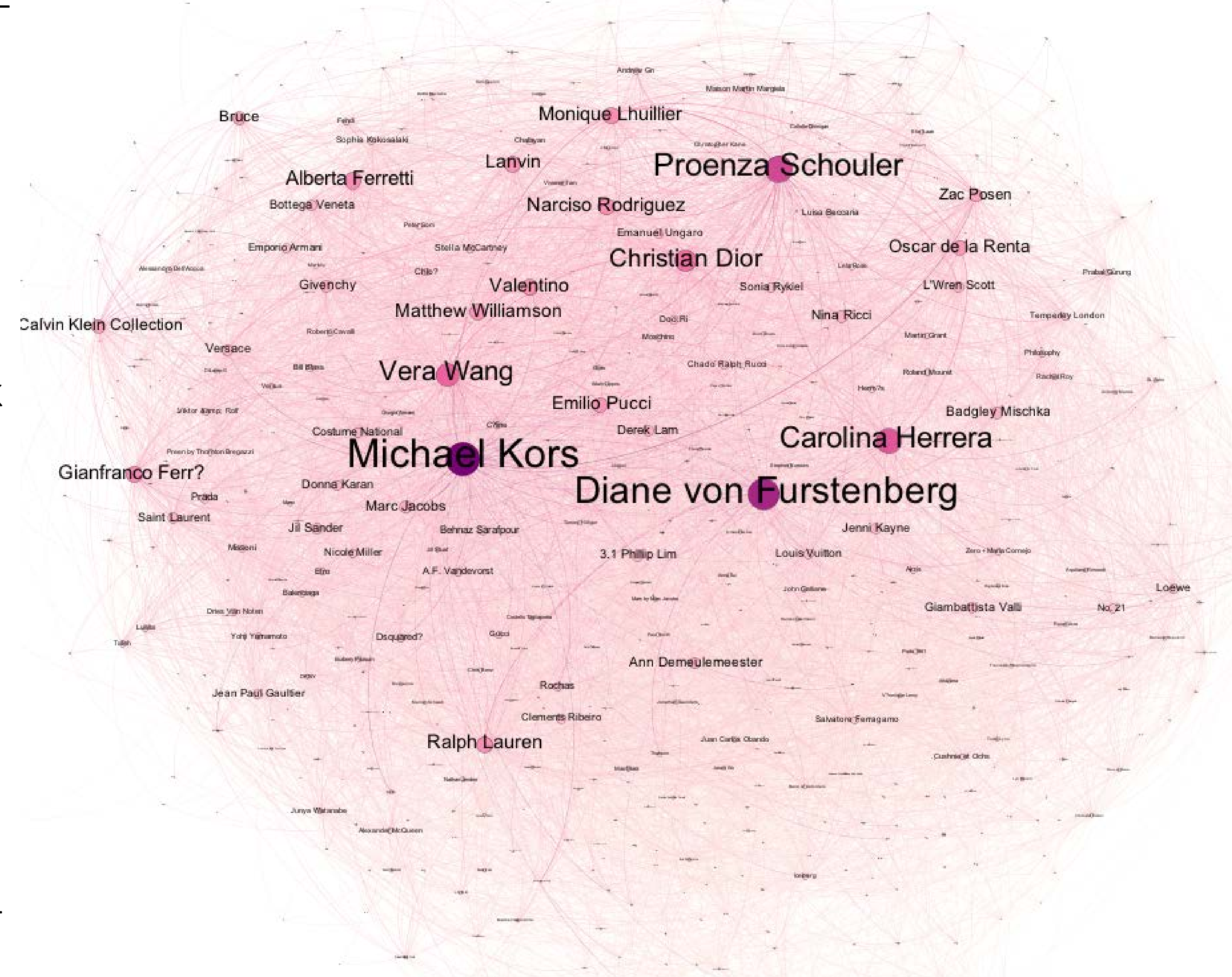


Figure 1. Fashion influence network of all collected fashion noun phrases

- In the fashion influence network, nodes are designers and edges are the influence relationships.
- When a review at season  $s_b$  belongs to designer B adopts a fashion symbol review at season  $s_a$  of designer A also adopted in previous seasons, a directed link from designer B to designer A is constructed.
- Once the trace of influence finds the possible influence from the nearest earlier season, the tracing stops.
- PageRank is chosen as the ranking algorithm.
- Only 1,896 out of 26,579 noun phrases appear in the influence links.

## Innovative ≠ Influential

- Intuitively, people think designers that set the trends in fashion industry are those innovative ones.
- However, Michael Kors, who is ranked as the most influential designer according to our fashion influence network, did not innovate 9 out of the 12 fashion symbols it is responsible for setting the trends.

## Case Study: Pencil Skirt

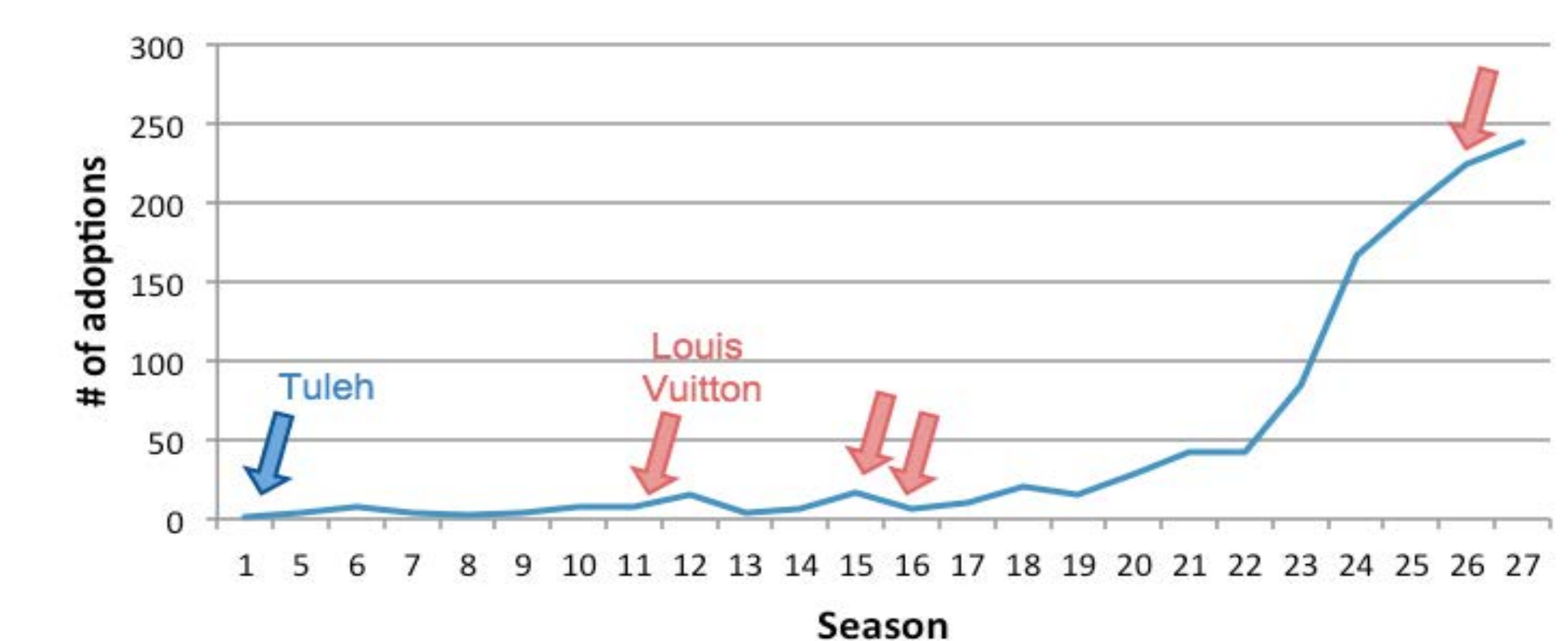


Figure 2. Adoption of pencil skirt from Fall 2000 to Spring 2014

- The pencil skirt was introduced by Tuleh at Fall 2000, but it stayed unpopular for a few years.
- Louis Vuitton adopted the pencil skirt in 2005, which led to the popularity of the pencil skirt.

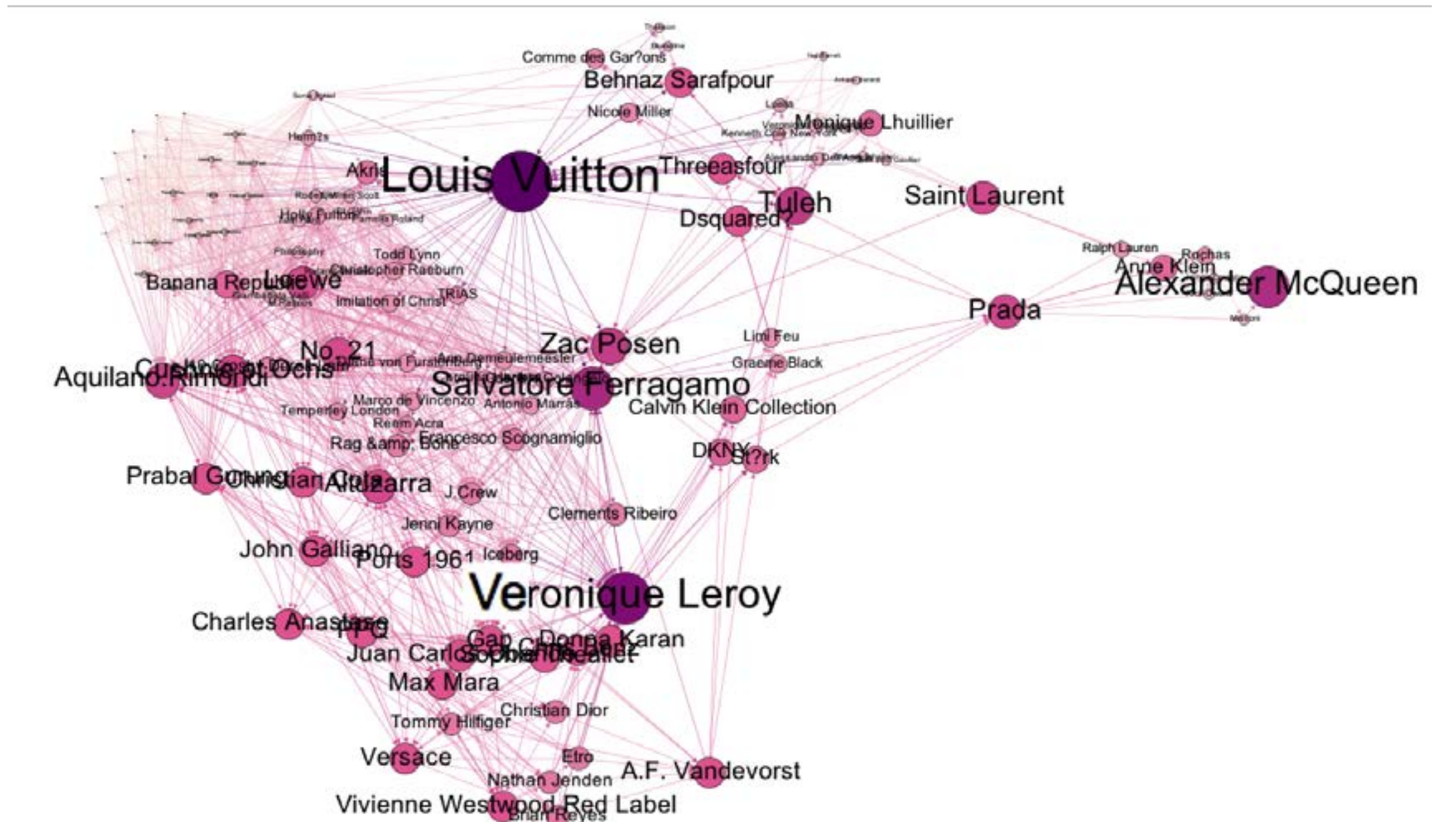


Figure 3. Influence network of pencil skirt at Spring 2014