Analysis of user perception and fashion image on a stripe pattern for men's shirts by using semantic network analysis

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Introduction In regards to clothing, a stripe pattern is used universally in all countries because it does not go out of style, nor does it get boring as it portrays a simple and clear image compared to other abstract patterns (Park, 2005). In fashion design, ongoing research is being carried out on the stripe pattern and the evaluation of its visual image. Research has shown that diversity in shape, width, stripe gaps, and coloration leads to a difference in the clothing fashion image (Choi, 2014). However, most of the previous research of stripes and their fashion image has been carried out through quantitative perception surveys with stimuli and scaling systems which are set by the researchers. Even though several of the surveys have shown various levels of success, it is not possible to measure the quickly changing perceptions of various users as fashion trends quickly come and go. As a solution, word-of-mouth (WOM) has been proven to be useful in social media, a real-time communication platform that is on the rise, showing a high correlation between the perception and evaluation of consumer products (Walsh & Mitchell, 2010). Thus, the study applied a semantic network analysis, which is an effective technique to extract the content of messages from online texts and indicates a network of semantic relationships between keywords, to examining various users' real-time responses. The study also analyzed users' perceptions and the representative fashion images of men's striped shirts.

Methods The study selected "Men's Striped Shirts" as the search parameter and collected a total of 17,516 online Blog posts from Naver (www.naver.com), the most popular portal website in Korea, over two periods: November 2010 to October 2011 and November 2015 to October 2016. The specific research process went as follows. First, a social matrix program called *Textom 2.0* was used to collect posts from the two time periods. Also, 70 noun and adjective keywords related to the design and fashion image of men's striped shirts were derived through frequency analyses. Secondly, Ucinet6 (Borgatti et al., 2002) was utilized for centrality analysis based on the co-occurrence of selected keywords and extracted representative fashion images of men's striped shirts. Thirdly, keywords used in the networks from each period were collected and an investigation of the change in users' perceptions through linked distance and the degree

between adjective keywords (e.g., basic, simple, etc) and design keywords (e.g., style, color, fabric, pattern, etc) was conducted.

Finding & Discussion Firstly, the analysis of the key words' frequency and the degree centrality concluded that of the two periods, 'casual (0.24%, 0.026)' and 'classic (0.13%, 0.014)' were the most relevant fashion images of men's striped shirts. Secondly, a network analysis on classic images showed that adjectives such as 'basic', 'simple', and 'quality' were effective. During the time period from 2010 to 2011, the relevancy of ‘basic’ style, the color ‘white’ and ‘simple’ patterns were very highly regarded. However, from 2015 to 2016, awareness of a ‘customized’ product and ‘quality’ fabrics were on the rise. An analysis of casual images revealed that from 2010 to 2011, ‘stylish’ and ‘street’ styles; the colors ‘blue’, ‘black’, and ‘red’; ‘comfortable’ fabric; and ‘striking’ patterns were mainly discussed by users. During the time period from 2015 to 2016, users' usage of 'cute' and 'sporty' in style, and 'light' and 'soft' in fabrics become noticeably increased.

Conclusions and Further Research The aim of this research is to analyze the fashion image of the striped pattern on men's shirts through users' social media text data. The proposed method, semantic network analysis, enabled us to extract and summarize the changing design perception of users in line with its conceptualization. It can be seen that continuous research of social media analysis on fashion design that predicts people's demands and readily responds to those demands can become a vital area of research. Moreover, the semantic network analysis method used in this study will provide new guidelines for big data usage in the area of fashion design.

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