Picture Perfect: An Image Mining of Advertising Content and Its Effects on Social Targeting

by

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Abstract: Using an image analysis framework that is based on machine learning algorithms, this study investigated how diverse image components of advertisements designed for fashion products affect consumers’ search behaviors and purchase propensities in mobile environments. We focused particularly on the impact of various image attributes on the effectiveness of two popular forms of social targeting, namely the dynamic product advertisement (DPA) and customer audience (CA) strategies. We obtained tailored advertising image contents for 13,040 products across 84 different retailers through random sampling and extracted five image content features: (1) facial expressions, (2) degrees of stimulus content, (3) image classification, (4) color properties, and (5) texts contained within the images. We then examined how such ad image attributes affect consumers’ click-through rates and conversions and determine the effectiveness of social targeting on the basis of simultaneous estimation frameworks. Our results revealed that emotional appeal (i.e., sexual images) positively influences consumers’ click-through decisions, whereas informational appeal (i.e., text-embedded images) is effective for people who process a high cognitive load (e.g., purchases). We used eye-tracking field experiments to validate our empirical findings and explore the dynamics underlying consumers’ image-based search and purchase behaviors when targeted. Overall our study lay a foundation on the effects of image-based social targeting on consumer behaviors that are complex and dynamically evolving in digital, mobile environments.

Bio: Hyunji So is a doctoral candidate in the College of Business at Korea Advanced Institutes of Science and Technology (KAIST). She received a BA in biochemical engineering and management science and a MS in management engineering from KAIST. She is expected to earn her PhD in information systems from KAIST in August 2019. Her research interests include the economics of information systems, artificial intelligence and business strategy, big data/image analytics, mobile commerce and marketing, and social networks and targeting-based advertising. She has published an article in Information Systems Research and presented her works at major IS conferences, including International Conference on Information Systems and Workshop on Information Systems and Economics. She will be participating in the 2018 ICIS Doctoral Consortium in San Francisco.