



Understanding the majority opinion formation process in online environments: An exploratory approach to Facebook



Sangwon Lee, Taehyun Ha*, Daeho Lee, Jang Hyun Kim

Department of Interaction Science, Sungkyunkwan University, South Korea

ARTICLE INFO

Keywords:

Online social network
Majority opinion
Bandwagon effect
Social affordance

ABSTRACT

Majority opinions are often observed in the process of social interaction in online communities, but few studies have addressed this issue with empirical data. To identify an appropriate theoretical lens for explaining majority opinions in online environments, this study investigates the skewness statistic, which indicates how many “Likes” are skewed to major comments on a Facebook post; 3489 posts are gathered from the New York Times Facebook page for 100 days. Results show that time is not an influential factor for skewness increase, but the number of comments has a logarithmic relation to skewness increase. Regression models and Chow tests show that this relationship differs depending on topic contents, but majority opinions are significant in overall. These results suggest that the bandwagon effect due to social affordance can be a suitable mechanism for explaining majority opinion formation in an online environment and that majority opinions in online communities can be misperceived due to overestimation.

1. Introduction

Since 2004, Facebook has been rapidly growing in terms of both the number of users and amount of usage. Statista (2018) reported that Facebook became one of the most well-known and most frequently used online social network (OSN) services and estimated that the number of Facebook users was 2.234 billion in the second quarter of 2018. In the early stage, the usage purpose of OSN services was limited to interacting with friends, but it soon became multipurpose, with sharing of information or discussing of certain issues outside one's original social circle. Increases in the number of users and diversified usage of OSNs have characterized OSNs as places of public opinion.

With changes in the purpose of use, academic approaches to Facebook have been accomplished with various topics and methods (e.g., Hermida, Fletcher, Korell, and Logan, 2012; Lai and Yang, 2015; Wilson, Gosling and Graham, 2012). One focus has been the difference between social interactions in OSNs and face-to-face personal interactions; specifically, researchers analyzed interactive behaviors in OSNs from the social capital perspective (Ellison, Steinfield, and Lampe, 2007; Ellison, Vitak, Gray, and Lampe, 2014; Steinfield, Ellison, and Lampe, 2008) and analyzed its effects on user perception (Chiou, Chen, and Liao, 2014; Lin and Lu, 2011). Especially, Lerman, Yan, and Wu (2016) suggested that OSNs can make users misperceive majority opinions expressed because the network structure allows users to believe a certain opinion is supported by many other users. They mentioned that such overestimation can create the illusion of a majority and induce misunderstandings. Misperception of public opinion often induces problems such as ideological polarization (Ahler, 2014). Thus, the convergence of majority opinions in OSNs should be investigated in detail from the communication theory perspective.

* Corresponding author.

E-mail address: ontophilla@gmail.com (T. Ha).

The bandwagon effect (Leibenstein, 1950) can be considered as a theory for explaining majority opinion construction in OSNs. The bandwagon effect refers to a psychological phenomenon in which a crowd tends to blindly concentrate on a particular choice based on a perceived trend without making any value judgment with respect to the trend. If majority opinions on OSNs are constructed by the bandwagon effect, majority opinions are not formed because of their semantic importance but because of a certain social structure that is formed around opinion skewness. In other words, it implies that majority opinions on OSNs are not as important semantically as we expected. If this prediction is true, majority opinions don't represent public opinions, and we can understand why opinions posted on an online community are more often exaggerated than actual user opinions; thus, a certain social structure affects opinion skewness.

Along with the possibility of the bandwagon effect, researchers who study social affordance have investigated the possibility that majority opinions are naturally afforded by the social structure. Social affordance comes from a social structure and directly affords user perceptions and behaviors without mental representation or information processing (Baron and Boudreau, 1987; Marsh, Richardson, Baron, and Schmidt, 2006). With the dynamic reciprocal relationships between users and the social environments, social affordances inform certain user actions (Kreijns and Kirschner, 2001). The concept of social affordance suggests that opinion skewness can be strengthened, maintained, or weakened depending on the type of social structure and whether the structure varies with time. Researchers of social affordance have argued that humans' social perception and behavior appear through such kinematics in social structures (Valenti and Gold, 1991).

Drawing on background reviews of the bandwagon effect and social affordance, this study will examine the opinions of Facebook users regarding newspaper articles from the *New York Times* (NYT). To determine if a particular comment is a majority opinion, we counted the number of "Likes" on that comment, and to confirm whether the formation of opinions depends on the type of newspaper articles being discussed, we classified newspaper articles into eight categories: arts, business, cooking, region, opinion, sports, the United States (US), and the world. Through the regression analysis and Chow test, we present that time is not an influential factor for making opinions skew, but the number of comments has a logarithmic relation to skewness increase. Regression models and Chow tests show that this relationship differs depending on topic contents, but majority opinions are significant in overall. These results suggest that the bandwagon effect due to social affordance can be a suitable mechanism for explaining majority opinion formation in an online environment and that majority opinions in online communities can be misperceived due to overestimation. Considering the findings that opinions generally tend to skew to some majority opinions and each topic has its own tendency, communication researchers, marketers, and opinion analysts can determine whether a certain opinion for a topic is an opinion exceptionally supported by the majority or just an opinion appeared because of its topical characteristic.

2. Background

2.1. User opinion analysis

User opinions can be important data for analyzing public opinion on an issue or on user niches with respect to a product or service. Several studies have suggested technical methods that analyze user opinions on OSNs based on textual data. Lin, Wu, Chen, Ku, and Chen (2014) suggested an effective semantic analysis method for Facebook comments that identifies events in which users are interested. Shrivastava and Pant (2012) suggested a model that classifies user status into good, bad, or average by using a corpus from Facebook data. Habernal, Ptáček, and Steinberger (2015) examined five feature selection algorithms for sentiment analysis in OSNs and reported its performance results. Petz et al. (2013, 2015) showed that several additional features, including the number of sentences, structural properties of sentences, and emoticons can be useful for analyzing user opinions on social media and online websites. These studies have shown that various textual features can be used to analyze user opinions on OSNs, but their limitation is that they weighted each user comment equally. In many cases, users do not read all comments and instead read some important comments (majority opinions). Several empirical studies have reported that users' focuses tend to be skewed only to some popular videos (Li, Wang, Liu, and Xu, 2013), posts (Li, Gharibshah, Papalexakis, and Faloutsos, 2017), and reviews (Matakos and Tsaparas, 2016). It is necessary to focus on the majority opinions and their construction process to accurately grasp user opinions on OSNs.

In Facebook, majority opinions can be identified by the number of Likes on comments. The number of Likes provides feelings of being listened to and supported by virtual users and a comment with many Likes can be regarded as a major comment supported by many users (de la Peña and Quintanilla, 2015). The effects of Likes have been examined in several studies. Jiménez and Mendoza (2013) investigated factors affecting user perception of reviews with a high number of Likes and showed that users highly agreed with and trusted comments with high scores. Phua and Ahn (2016) showed that the number of Likes on a Facebook fan page was related to user engagement, perceptions of trustworthiness, and purchase intention. Through an agent-based simulation study, Maity and Mukherjee (2012) reported that dominance in user opinions can boost various opinions to be merged into one consensus. These studies have shown that Likes on Facebook can significantly affect user perceptions and behaviors and can be an indicator for analyzing majority opinion construction on Facebook. There have been few studies on the effects of Likes on comments in the context of news media. However, considering many news media companies and journalists have used online social networks for engaging users in news contents by encouraging clicking the Like or Tweet button (Singer et al., 2011), we can predict that the findings of the previous studies would be compatible to explain the effects of Likes in the context of news media.

Other network scientists have addressed how the majority opinions appeared as a consequence of user interaction. The models of network studies can be divided into discrete and continuous. In the discrete model, user opinions are described by 1 (agree) or 0 (disagree). The Sznajd model (Sznajd-Weron and Sznajd, 2000), voter model (Holley and Liggett, 1975), and Galam majority-rule

Download English Version:

<https://daneshyari.com/en/article/10997998>

Download Persian Version:

<https://daneshyari.com/article/10997998>

[Daneshyari.com](https://daneshyari.com)