Identifying Opinion Leaders in the Online Communities of Consumption Based on SNA

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Abstract. The opinion leaders play crucial roles in affecting the purchase attentions and behaviors of consumers. Compared to the offline opinion leaders utilizing the word-of-mouth information, the online opinion leaders nowadays enable the electronic word-of-mouth information to be spread faster and be flowed to a wider population. Furthermore, with the popularity of the online communities of consumption, the influences of online opinion leaders on the potential consumers can hardly be neglected. This article begins with sorting out the current approaches for identifying online opinion leaders, points out that Social Network Analysis (SNA) is a commonly used approach for identifying opinion leaders inside SNS or online communities and analyzes how to use SNA for identifying the opinion leaders inside the online communities of consumption.

Introduction

Nowadays, with the development and improvement of Internet, individuals become able to interact with others online and share information online. They also begin to get used to purchasing online and sharing the electronic word-of-mouth (eWOM) information with others.

However, facing with numerous eWOM information of the products or services, consumers can hardly evaluate and judge all of them. The opinion leader offers a solution to the problem: when the potential consumers faced with a complex choice, they can turn to the opinion leaders for help. Opinion leaders are individuals who actively receive WOM information and send it out with their subject ideas to some degree to others [1]. They affect the diffusion and adoption of new products, and others’ choices through various communication channels [2, 3]. Furthermore, their influences on the decision-making process of other potential consumers are widely analyzed and confirmed [4, 5].

Considering the crucial influence of opinion leaders on the consumers, companies and marketers begin to consider them as an attractive tool for marketing [6] and pay more and more attention to utilize them through Internet. In particular, the popularity of online communities of consumption, inside which the potential consumers can discuss about products and services and can make consumption, also enables these companies and marketers to realize the economic potentials of the opinion leaders in such kind of communities.

Actually, there are some online forums are designed to show the attributes of users, such as the number of followers, and thus the opinion leaders can be easily distinguished from others. Obviously, the more followers the individual has, the more likely will he or she be the opinion leader. Other members are easier to figure out who are the opinion leaders and to follow them. After following the opinion leaders, these potential consumers are more likely to be affected by their messages. Meanwhile, the companies are also easier to figure out opinion leaders and utilize them, such as cooperate with them for advertisements.

However, many other SNS do not have this function and fail to show who are the opinion leaders directly.

Facing with this situation, the researches related on identifying opinion leaders are becoming one of the hottest topics in the academic field.
Previous researches show that the researches about the approaches for identifying online opinion leaders can be mainly divided into three categories, including the user attributes analysis, the text mining analysis and network structure analysis.

As for an approach of network structure analysis, the Social Network Analysis (SNA) is widely used to identify opinion leaders in BBS [7], in blogs [8], in Microblogs [9,10,11], in social networks [12,13], in online communities of knowledge [14,15] and so on.

Hence, when considering identifying the opinion leaders inside the online communities of consumption, also a kind of online community, SNA is applicable and should be emphasized by the researchers in the future.

Social Network Theory (SNA)

Basic Introduction

The social network is a set of nodes (such as individual actors or organizations) and of the dyadic ties between these actors (namely their relationship) [16, 17].

The members and the relationships inside the online communities form the social networks of the communities. The nodes are also called social actors, representing the community members. The lines represent their relationships, and structure of the social network shows that the individuals are connected by their social relations [18, 19]. Hence, SNA enables the researchers to understand the way in which a group of individuals gather in a social space and the particular meanings of the particular structures of them [20].

The four basic concepts in the social network include actor, relationship, tie and the network [21].

1) Nodes. The nodes in the social network represent the actors in the society. Such actors can be individuals, collective social units and so on.

2) Relationship. The relationships in the social network represent the interaction between the actors. It is characterized by the content, the direction and the intensity [22].

3) Ties. The tie represents a specific relationship between a pair of actors [23].

4) Network. A network is a collection of relationships. The social network refers to the set of relationships between social actors.

Basic Principles

The researchers usually deeply study the network structures, like the network pattern beneath the complicated social systems, so as to learn about how the network structures, including normative prescriptions, personal attributes, and dyadic relationships, affect the social behavior and social change [24].

The basic principles of SNA include [25]: (1) Ties in the network are asymmetric but reciprocal. Meanwhile, the contents and intensity of these ties are different. (2) Ties link the members inside the network both directly and indirectly. Hence, the ties must be analyzed within a larger network structure. (3) The structure of ties is not random and thus result in the network clusters, boundaries, and cross-linkages. (4) Cross-linkages connect not only individuals but also clusters. (5) The complex network structure and asymmetric ties result in the uneven distribution of scarce resources. (6) In order to get access to the scarce resources, the competitive and collaborative relationships among the members are formed.

The Indicators of Opinion Leaders

In the online communities of consumption, the dissemination of word-of-mouth information, the communication among members and the activities on the products or services occur in the network of social relations. Hence, the members are subject to be affected by the features of social networks.

When consider the features of social networks, the concepts of network location and network role are crucial [26]. The network locations represent a series of individual actors embedded in the social
network. The network roles appear when these locations are connecting together and illustrate the relationship patterns among actors.

More and more researchers begin to use the network location to analyze the influences and functions of different positions in the network. [27] find that inside the online communities of knowledge, the members in the central positions are more influential than the members in other positions. [28] concludes that the members with higher degree centrality serve as opinion leaders and they can affect others. [29] point out that the actors who occupy the structure holes can get access to various resources. These researchers all analyzed the positions and advantages resulting from the network structure and identified the key influential nodes through studying the network structure.

According to [30], the central position, the structural hole position, and the edge position are three typical network locations in the social network. The nodes taking the edge positions are at the edge of the network structure and have fewer connections to the actors in the network, with limited capacity for information identification, acquisition, transmission and control.

Because the nodes taking the edge positions can hardly affect others and hardly become opinion leaders, only the nodes taking central positions and the structural hole positions are always deemed as the individuals who have potential to be opinion leaders.

1) The central position

The nodes taking the central positions refer to the individual actors in a social network who have many connections with other members and who are in the center of the network. Such individuals are the core of the network, have more connections with other members, be more active, more prestigious and more powerful, when compared with the actors taking the edge positions [31].

The indicators for judging whether the node is in the central position or not include the Degree centrality, Betweenness centrality and Closeness centrality. The Degree centrality is to measure the sum of the paths of the node connecting with others. It can be subdivided into the InDegree centrality, which represents the number of the replies received by the posters from the repliers, and the OutDegree centrality, which represents the number of the repliers sent by a specific node to others. The Betweenness centrality is to measure the sum of times that the node is in the shortcut of many other pair nodes. Namely, it is to measure the control degree of the node towards the overall resources inside the network. The Closeness centrality measures how close a node is to other actors in the network.

2) The structural hole position

The structural hole position refers to the location of a third party who can connect two individuals who otherwise will be separate. The nodes taking such kind of position have a key connection effect and they can control more information flow in the network [32]. They can control, identify and transmit the information, and thus be able to collect information from different channels. Hence, they could enjoy the benefit from this information and become the opinion leaders.

The mainly used indicators of structure holes include Effect Size and Constraint. The Effect Size measures the effective size of ego's network and the Constraint measures the degree to which the ego is connected with others.

[33] pointed out that only relying on the value of degree centrality can hardly identify the opinion leader. A high value of degree centrality may because of a high InDegree centrality or a low OutDegree centrality. The high InDegree centrality can only explain that others are willing to ask for information from this node and a low OutDegree centrality can only explain that this node is not an active information sender.

Consequently, in order to identifying opinion leaders in the online communities of consumption, these two approaches will be integrated for identifying the opinion leaders. Namely, the indicators of opinion leadership include:

- InDegree
- OutDegree
- Betweenness
- inFarness and outFarness
Conclusion

This article sorts out the current approaches for identifying online opinion leaders and illustrates the applicability of SNA on identifying the opinion leaders in the online communities of consumption. Then the basic introduction and basic principles of SNA are introduced. Furthermore, the indicators of opinion leaders by using SNA are studied and explained. Hence, the future researchers and marketers can utilize SNA to analyze whether the members are taking both the central positions and structure hole position and thus to judge whether the members are opinion leaders or not. After identifying the opinion leaders, the future researchers and marketers can implement some strategies to promote their products or services.

References


