Effect of the Quality of Microblog Information Content on Internet Public Opinion Dissemination

Yujie Zhou, Changbin Jiang, Qiuman Lin and Lanlan Wang

ABSTRACT

In the era of mobile internet, microblog has become the main source of information for people, and its information quality is crucial. From the perspective of information content quality, this paper constructs a quality index system of microblog information content, uses correlation analysis and empirical analysis to verify the impact of relevant indicators on the dissemination of public opinion, and concludes that the quality of microblog information content has a positive impact on the transmission of microblog. Finally, the key quality factors affecting the dissemination of public opinion are obtained, which can provide reference for the management of network public opinion.

1. INTRODUCTION

As a hot source of information in recent years, microblog has the characteristics of huge amount of information, serious information redundancy, difficult to identify the quality of information and so on. Information quality analysis is helpful to analyze the related factors that affect the network public opinion communication. Content is the basis of information quality, the research on the content quality of microblog information can get the factors that affect the spread of public opinion on the Internet, and then control the spread of public opinion to a certain extent.
Therefore, this paper uses the number of microblog forwarding as an external indicator of public opinion dissemination, analyses the correlation between microblog information content quality index and microblog forwarding number, in order to study the influence of microblog information content quality on network public opinion dissemination.

2. RELATED CONCEPTS

2.1 Quality of Information Content

Information refers to the nature of things, states, and processes that can act on other things and thus perceive others. The advent of the information age has made the quality of information more and more important to the public. Obviously, as the public's requirements for information resources increase, the quality of information will also become an important factor affecting the spread of public opinion. And content is precisely the root of information quality. Therefore, the evaluation and research on the quality of information content has certain significance.

Information content quality evaluation indicators include objectivity and correctness. Objective refers to the inspection of things according to their original features, and has nothing to do with all personal feelings, prejudices or opinions. The facts reflected by the information are always attributes of a certain aspect of an objective thing (or system), which itself has objectivity. Correct means conforming to facts, reasons or some recognized standard. The correctness evaluation index of information content focuses on the subjective component of the information content. In the general evaluation indicators, the reliability and credibility of information are often listed among them. The reliability and credibility of information content can be guaranteed by the objectivity and correctness of the information content. As long as the content is objective and correct, it can be considered to be reliable and credible [1].

2.2 Correlation Analysis

Correlation analysis refers to the analysis of two or more related variable elements to measure the closeness of the two variable factors. Analyzing only the correlation between two variables is called a simple correlation, and analyzing the correlation between two or more variables is called a complex correlation.

There are currently two methods that can be used to describe the simple correlation between variables: (1). Draw a scatter plot of the data, perform a simple analysis through the trend presented by the scatter plot; (2). Calculate the simple correlation function and use Statistical indicators such as
correlation coefficients express the positive or negative or the magnitude of the correlation between the two variables.

In general, the correlation coefficient value is between -1 and 1, the correlation coefficient value is positive indicating positive correlation, the correlation coefficient value is negative indicating negative correlation, and the absolute value of correlation coefficient is equal to zero indicating zero correlation. The absolute value of the correlation coefficient is between 0.8 and 1.0, indicating a strong correlation between variables; a strong correlation at 0.6-0.8; a moderate correlation at 0.4-0.6; a weak correlation at 0.2-0.4; and a weak correlation at 0.0-0.2 or no correlation.

3. CONSTRUCTION OF MICROBLOGGING CONTENT QUALITY INDICATORS

3.1 The Quality of Microblog Information Content and Related Indicators

Starting from the objective attribute of information content, this paper focuses on describing the information quality of microblog from the content aspect. Combining the information content and the characteristics of microblog information, the quality of microblog information content is divided into four aspects: information volume, information relevance, professionalism of information formats and the type of information content. It establishes the theoretical basis for the following empirical analysis [2].

1) Information volume: Reflect information volume conveyed by a microblog message. Considering the feasibility of data collection, this paper will examine the following two characteristic values:

1) The amount of text information: Due to the complexity of the characteristics and quality of a microblog posting, the amount of textual information is represented by the number of words of the user's original text (non-forwarding) in a certain microblog information.

2) Hyperlink information volume: Microblog is short in length, and hyperlinks may have high quality related information as information expansion. Therefore, whether or not a hyperlink is included can indirectly reflect the information volume.

2) Information relevance: Measure by the number of topics contained in the microblog information (indicated by #). Referring to topics can reflect the degree of relevance between microblog information and an event. Participation of microblog information in topic discussion can quickly attract the attention and interest of other users concerned about the topic, and to some extent reflects the relevant heat of microblog information content.

3) Professionalism of information formats: through microblogging number of title information contained (represented by []).
information published by the media microblog and the organization microblog has a professional and formal format. The use of the title reflects the formality and specialization of the information released by the media, which can help users quickly grasp the information focus and can make information content more convincing.

(4) The type of information content: expressed by the type of text frame used in the microblog information. In the context of opinion, the textual framework refers to a cognitive structure or cognitive orientation that exists in people's minds. Through this structure, people's intuition and understanding of things can be organized[3]. The frame information can be divided into: the problem definition (through event interpret the significance and interpretation of the nature of the event determines), causal explanation (of the cause of the event analysis and interpretation), solutions (resolving solutions to problems exposed in the incident), and emotional expressions (the emotions or emotions expressed in response to the event may be either emotional bursts or catharsis, or a subjective assessment)[4]. The difference in the textual framework used for information leads to differences in the quality and value of its content. Knowledge is the correct understanding and mastery of the existence of objective laws through the refinement of information. Therefore, this paper assigns different weight ratios to the four text frames. The rational discourse framework, such as problem definition, causal explanation, and emotional expression, will give higher weight, while the perceptual discourse framework will give lower weight. The numerical formula for calculating the content type index is as follows:

\[
\text{The type of information content} = \sum \text{number of frame used} \times \text{frame's weight}
\]

Referring to Sheng Yu's personal microblog information quality evaluation index system, each index is given equal weight [5]. Microblog information content quality formula is as follows:

\[
\text{The quality of microblog information content} = (\text{the amount of text information} + \text{Hyperlink information volume} + \text{Information relevance} + \text{Professionalism of information formats} + \text{The type of information content}) \times 20\%
\]

3.2 Impact on Internet Public Opinion Transmission

This paper will use the number of microblog forwarding as an objective evaluation index of network public opinion communication. Spread on the microblogging network of public opinion can be measured by the number of microblog forwarding. The higher the quality of microblog information content is, the more users will think that the microblog has certain dissemination value, and then carry out forwarding operations. The microblog information forwarded by users confirms that it is recognized by users, and the content of microblog forwarded will be seen by more users,
which will make the microblog information more widely disseminated [6]. Therefore, it is assumed that the quality of information content of a public opinion microblog has a positive impact on the number of forwards of this microblog, that is, the quality of information content of microblog has a positive impact on the dissemination of public opinion. According to the multiple indicators proposed above, different quality indicators have different degrees of influence. Therefore, the following assumptions can be made:

H1. The amount of text information has a positive influence for microblog's forwarding;
H2. Hyperlink information volume has a positive influence for microblog's forwarding;
H3. Information relevance has a positive influence for microblog's forwarding;
H4. Professionalism of information formats have a positive influence for microblog's forwarding;
H5. The type of information content has a positive influence for microblog's forwarding;
H6. The quality of microblog information content has a positive influence for microblog's forwarding.

4. EMPIRICAL ANALYSIS

4.1 Data Collection and Statistics

This paper takes 5 days before and after the event Baidu search peak time (March 25) as the data capture time period, and uses the software HouYi to capture the microblog data related to the event keyword “wearing suspected kimono into a university in Wuhan to appreciate cherry blossom”. In view of the length, the top 30 microblogs with the highest number of forwarding data are selected as the analysis samples. Based on the proposed indicators, the collected data are statistically analyzed. Some of the data are shown in the following table:
# Data Analysis

In this paper, using the bivariate correlation analysis in SPSS software, the Spearman rank correlation method is used to calculate the rank correlation coefficient between variables and the P value of the correlation coefficient significance test. Spearman rank correlation is a method of studying the correlation between two variables based on grade data. Correlation analysis is carried out between the various indicators proposed in the previous paper and the microblog forwarding number as variables. Through this analysis, the influence of each index on the number of microblog forwarding can be examined. The relevant relationship is shown in the following table II:

## TABLE II. CORRELATION ANALYSIS DATA.

<table>
<thead>
<tr>
<th>Users</th>
<th>Number of microblog forwarding</th>
<th>The amount of text information</th>
<th>Hyperlink information volume</th>
<th>Information relevance</th>
<th>Professionalism of information formats</th>
<th>The type of information content</th>
<th>The quality of microblog information content</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1349</td>
<td>260</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0.52</td>
<td>52.704</td>
</tr>
<tr>
<td>02</td>
<td>992</td>
<td>331</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0.52</td>
<td>67.104</td>
</tr>
<tr>
<td>03</td>
<td>890</td>
<td>341</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0.74</td>
<td>68.948</td>
</tr>
<tr>
<td>04</td>
<td>486</td>
<td>117</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0.26</td>
<td>24.252</td>
</tr>
<tr>
<td>05</td>
<td>428</td>
<td>141</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0.26</td>
<td>28.852</td>
</tr>
</tbody>
</table>

*S. Correlation is significant at the 0.05 level (2-tailed)
From the data in the table, we can see:

(1) The correlation coefficient between the amount of text information and the number of forwarding is 0.367, which is significantly correlated at the level of 0.05, and can be obtained as weak correlation according to the correlation coefficient discriminating rule. Therefore, it can be concluded that the influence of the amount of text information on the number of microblog forwarding is positive and the degree of influence is small. The assumption of H1 is valid.

(2) The correlation coefficient between the information relevance and the number of forwarding is -0.384, which is significantly correlated at the level of 0.05. According the rule, it can be weakly correlated. Therefore, it can be concluded that the influence of the information relevance on the number of microblog forwarding is negative and the degree of influence is small. So the assumption of H3 is not valid.

(3) The correlation coefficient between hyperlink information and the number of forwards is -0.031, which is not significant. It can be seen that there is a very weak negative correlation between it and the number of forwards. That is to say, the influence of hyperlink information on the number of microblog forwarding is negative and very weak. Therefore, the assumption of H2 is not valid.

There is no significant correlation between professionalism of information formats, the type of information content, the quality of microblog information content and the number of forwards. The correlation coefficients are 0.212, 0.317 and 0.279, respectively. It can be seen that the impact of these three indicators on the number of forwards is positive and small. Therefore, the assumptions of H4, H5 and H6 are valid.

5. CONCLUSIONS

The number of microblog forwarding is an objective indicator of public opinion dissemination on the microblog platform, and is a measure of the quality of public opinion information content based on the user's perspective. It can be seen from the obtained data that information relevance is the most influential compared to other quality indicators. As the first negative influence factor, the reason may be that the microblogs are usually attached to a specific topic, and the microblogs with more forwarding are often included. The less the topic, the more topical it is. At the same time the amount of text information is the second factor affecting the number of microblog forwarding and is a positive factor. The original content of microblog is more attractive than the information content published by the media. It is easier to get the approval of other users, so it is easier to
disseminate information. As the third positive influencing factor of microblog forwarding number, the type of information content shows that users prefer rational discourse framework with rationality and logic to public opinion information. Information content with rational discourse framework may be more reliable and credible, and more conducive to the further dissemination of public opinion.

ACKNOWLEDGEMENTS

This paper is supported by National College Students Innovation and Entrepreneurship Training Program (20191049703012).

This paper is also supported by National Social Science Foundation of China (19BSSH013).

REFERENCES