

When Do People Post a Comment to a News Story on the Internet?

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Abstract

In reading news stories online, people are exposed to others' comments to a news story. In spite of popularity of comments to a news story online, the understanding of why and who posts a comment is still lacking. To complement scarcity and have a better understanding of comment-posting online, this study examined psychological factors which affect the likelihood of posting a comment to a news story online. In particular, three variables were considered: The first variable was communication efficacy, that is, an individual's belief about communication practices and systems, under the supposition that the people who have greater levels of communication efficacy are more likely to post a comment. The second variable was perception of public opinion, to test that when and if people judge their position of the issue as favored by the majority, they tend to post a comment. And finally, the tone of existing comments was included, to test if the tone of comments affects the willingness to post a comment. The results showed that firstly, people at a high level of communication efficacy are more likely to post a comment compared to people at the low level of communication efficacy. Secondly, the perception of public opinion partly influenced the willingness to post a comment. Especially, when people believe communication systems contribute to develop society and also when judged that their opinion is the majority's opinion, they are more likely to post a comment. Finally, the tone of the comments influenced the willingness to post a comment only on the condition that people are confident of the communication practice and are exposed to emotional comments.

Keywords: Users' comment to a news story online, spiral of silence, communication efficacy, willingness to post a comment/willingness to speak out, perception of public opinion

A preliminary version of this paper was presented at APIC-IST 2014 and was selected as an outstanding paper. This study used part of data which was collected in completion of the second author's Master's thesis

1. Introduction

Journalism has undergone massive changes since the Internet was introduced as conduit through which news reports were delivered. The most prominent feature of news online is that a reader can access news stories through the Internet and provide his or her responses to a news story. Internet users are able to leave comments on a news story while expressing their opinions, thoughts, and/or feelings in a couple of short sentences. Under these circumstances, users can learn others' opinions by reading other users' comments.

As users write and read comments on the news online, it is imperative to understand which and when individuals are prone to express their own opinion. This study has looked into the underlying motivation for writing comments online, and in the process has considered three variables as contributing factors. Firstly communication efficacy has been explored. The more efficient an individual is at communication, the more likely he or she is to express the opinion. Secondly, a climate of public opinion was tested. Drawn from a theory of spiral of silence, which suggests that people are inclined to estimate others' opinions and determine whether they should express their opinions, the perception of public opinion was considered. Finally, as the third variable, the tone of comments was included. Comments on the Internet often display derogative and disparaging remarks [1, 2] and the effect of the tones of comments was brought into question.

2. Literature Review

2.1 Communication Efficacy for Leaving Comments to News Online

It is suggested that online comments functions as a public space wherein opinions are expressed and exchanged. Political debates are held in this cyberspace even among non-political discussion groups [3] and the news stories tagged with the largest number of comments are observed to emphasize the corresponding political and social topics [4]. As more debates and diverse opinions have been presented, reading comments is claimed to be beneficial to society [5] and consequently, the more people read comments, the more knowledgeable they were of politics [6]. In the meantime, it was also reported that almost half of users did not post a comment at all, and users read comments without full attention and did not feel that they obtained information through reading comments [7].

The conflicting assessments about the online comments may demonstrate current status of news comments: the comments section on the news online serves as a public sphere, but still is suspicious of functioning as an ideal space. Then, what matters is how to envision online comments as an alternative to other public spheres. To this end, this study examined what factors contribute to willingness to post a comment (WP) and express one's opinion.

Firstly, communication efficacy (CE) was considered. CE is referred to as an individual's belief about communication practices. CE is drawn from literature on self-efficacy. Self-efficacy is an individual's belief that he or she has in regard to the successful completion of a given task and achieving goals [8]. Self-efficacy is noticed as an influential psychological element that explains and predicts behaviors. Numerous studies in many fields have used the self-efficacy and proved explanatory and predicting power of self-efficacy.

In the realm of cyberspace communication, self-efficacy also has been applied. Self-efficacy online is significantly related to information gathering and seeking [9]. In

addition, Park and Park observe that individuals who possess a greater level of self-efficacy tend to obtain more knowledge by using the Internet, compared to ones with a lower level of self-efficacy [10]. In a similar vein, Lee and Kim [11] present the concept of political discussion efficacy, which is defined as "the belief that communication practices (i.e., exchanges of thoughts and/or opinion, debate, discussion, etc.) contribute to the development of democracy and politics." Extending from the notion of self-efficacy, political discussion efficacy explains that communication practices regarding political issues help individuals identify communal interests, and while doing so, they engage in politics. In Lee and Kim's analysis on the Internet message boards, it is observed that users with a higher level of political discussion efficacy are likely to participate more frequently in activities on message boards.

In the vein of this discussion, the notion of self-efficacy can be applied in the case of scrutinizing a portion of cyberspace where people make comments on news articles online. CE can serve as a precedent to and facilitates communication practices on the Internet, such as posting a comment to news online. Thus, Research Question 1 is set as follows:

Research Question 1. How does communication efficacy influence individuals' willingness to post a comment after reading news articles online?

2.2 Perception of Public Opinion and Tones of Comments

To further the inquiry of individuals' engagement in expressing public opinion via leaving comments to news online, additional variables were considered. First, the perception of public opinion (PP) was included.

PP is drawn from the theory of the spiral of silence theory. The spiral of silence theory [12] proposes that an individual observes the climate of public opinion and estimates which opinion is dominant. When an individual makes a judgment that his or her own opinion is not favored in public, he or she tends to withdraw from expressing their opinion. In the meantime, if the public opinion favors his or her opinion, he or she is more likely to express the opinion. Studies provide supporting evidence of the spiral of silence.

Although prior studies recognize the phenomenon of reading and posting a comment to news online as practices of forming public opinion, they fail to investigate the influence of the perception of the climate of public opinion in the course of posting a comment. Exceptionally, Ho and McLeod [13] analyzed the application of the spiral of silence theory on the Internet and investigated the difference in shaping public opinion between online and offline from the perspective of the spiral of silence theory. The results showed that in both conditions of face-to-face (offline) and online chat room discussion groups (online), expression of public opinion was moderated by a variety of elements including fear of isolation. However, unfortunately, that study did not examine the influence of the perception of public opinion, which left the study insufficient to attest the probability of expressing public opinion. In this respect, this study contributes to building the literature on examining the impacts of PP to one's willingness to express public opinion online.

Moreover, based on Research Question 1, which examines the effect of CE to WP, PP is expected to influence the relationship between CE and WP. PP can contribute to explaining the possibility to express one's own opinion in cyberspace while modulating the effect of CE to WP. To this end, the effect of PP to the relationship between CE and WP is tested and Research Question 2 is set as the following:

Research Question 2. How does perception of public opinion change the relationship between communication efficacy and willingness to post a comment?

In addition, this study included another variable, the tone of comments (TC). The tone of comments is related to the negative mood of comments. Even though online comments are suggested as an alternative public sphere, in reality the comments are generally in the form of derogatory and distressing remarks.

To examine the effect of ET, out of an exploratory purpose, rather than a confirmatory purpose, Research Question 3 examines the moderating effect of TC in relation to the relationship between CE and WP. Therefore, Research Question 3 is set as the following:

Research Question 3. How does the relationship between communication efficacy and willingness to post a comment change, depending on the tone of comments to news online?

Research Questions in this study were illustrated in **Fig. 1**. The arrow from CE to WP attests Research Question 1. The arrow from PP to the relationship between CE and WP denotes Research Question 2, and the arrow from TC to the relationship from CE and WP denotes Research Question 3.

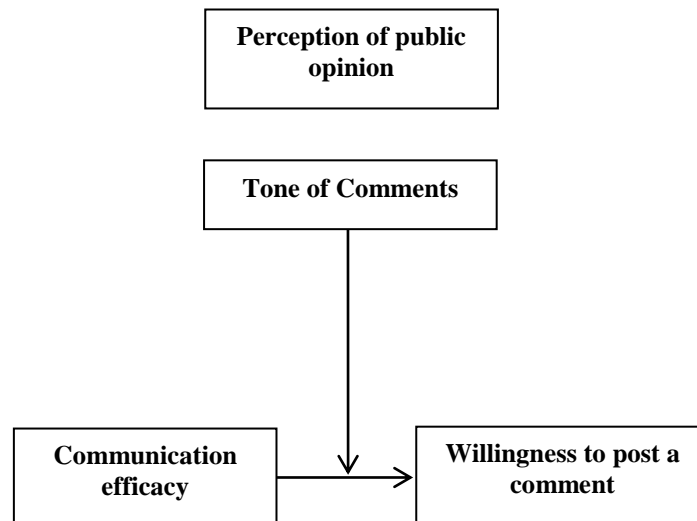


Fig. 1. Model of willingness to post a comment online

3. Research Method

A quasi-experimental design was set up and an online survey was administered. Participants read an online news report, which addressed the issue of reconstruction of the electricity transmission towers in the Milyang area, South Korea. That issue emerged as one of the most controversial topics with residents opposing to the reconstruction and government insisting on reconstructing the site. In addition to the news story, participants read corresponding comments as well.

PP and TC were manipulated by using different compositions of comments. Ten comments were attached to the news story, and the composition of eight versus two comments was used; Eight comments conveyed either pros or con opinions, and the remaining two comments delivered opposite opinions. The news story with eight comments reflected a majority

condition of PP when a participant's position on the issue matched the opinions in eight comments regardless of whether it was a pro or con. In addition, comments were written as either a rational or emotional appeal to manipulate the tone of comments. In summary, the experiment condition was designed as a 2 (PP, majority vs. minority) X 2 (TC, rational vs. emotional).

3.1 Measurements

3.1.1 Willingness to post a comment (WP)

Willingness to post a comment (WP) is the online user's intention to post a comment to a news story, that is, the willingness to express his or her opinion in public. It was measured on a 4-point scale with a question that asked: "are you willing to write a comment to the news story?" ('1' = never, '2' = with much reservation, '3' = with little reservation, '4' = with no reservation).

3.1.2 Communication efficacy of comments to a news story online (CE)

Communication efficacy (CE) is defined as the belief that he or she has toward communication practices and that the extent of expectation and evaluation that he or she has of how likely communication practices are constructive and beneficial. In regard to comments to a news story online, CE means the extent of expectation and evaluation that a user has toward how likely the comments to a news story online are constructive and beneficial. Four questions were used to measure communication efficacy of comments to a news story online on a 5-point scale ('1' = extremely disagree, '5' = extremely agree) [11]. The questions were "I have more interest in current social issues while reading comments to a news story online", "I am more involved with social affairs and feel the need to be a better citizen, so I read/write comments to a news story online", "comments to news online helps develop democracy in Korea", and finally "comments to news online contribute to development of democracy".

A factor analysis with the varimax rotation method produced two components whose Eigen value was greater than 1.0. The first two questions were clustered into one component and the remaining two questions were grouped together into the other component. The first component consisting of the first and second questions was named as internal communication efficacy ($\alpha=.80$), and the second component of the third and fourth questions was referred to as external communication efficacy ($\alpha=.77$).

3.1.3 Individual's position on the issue

The study asked a participant's position on the issue that was addressed in the online news article they read. Specifically, the study asked whether he or she agrees to the issue of reconstruction of the electricity transmission towers in Milyang area. A participant's position on the issue was assessed to determine the condition of the perception on public opinion in which the participant was placed. To assess the participant's agreement or disagreement with the issue, the question, "do you agree with the issue of the reconstruction of electricity transmission towers in Milyang?" was asked with two options of answering 'yes' or 'no'.

3.1.4. Perception of Public Opinion

Perception of Public Opinion (PO) was recorded after completing the survey. Based on the participant's position on the issue (agreement or disagreement), PO was classified into two conditions, majority and minority. When an individual's position on the issue matched to a majority of the comments, it was regarded a majority condition (i.e., an individual agreed to the issue and he or she was placed in the experimental condition that the majority of the comments also exhibited agreement). In the meantime, when an individual's issue position was coherent with minor opinion among the comments, it was considered as the minor condition (i.e. an individual agreed to the issue and he or she was exposed to the experimental condition that only a few comments agreed with the issue).

3.1.5. Tone of Comments

The Tone of Comments (TC) was manipulated by construing the comments either into rational or emotional ones. When a participant was exposed to the condition that the comments were written in a rational way (See 3.2. Experiment Materials for examples), it was considered as the rational tone. Meanwhile a participant was assigned to the condition that the comments were written in an emotional way (See 3.2. Experiment Materials for examples), it was coded as the emotional tone.

3.1.5 Other Variables

In addition to main variables, the question regarding the reason for not posting a comment was asked in an open-ended format. Demographic information (sex and age) was also measured.

3.2 Experiment Materials

The news story that was given to the participants included supporting arguments and opposing arguments on the issue of electricity transmission towers in Milyang, South Korea. The arguments were collected based on actual news articles. The news article and comments were placed on a template which was used by the most popular portal website in order to obtain a better resemblance.

Below the news story, a total of ten comments were attached. Those comments were composed of two versions to reflect the different conditions of PP. For example, eight comments were reconstructed as pros comments while two comments were constructed to show opposition to the argument of the news article.

TC manipulation was done by constructing comments as either rational or emotional ones. A rational comment contained logical arguments to support his or her opinion, and an emotional comment appealed to sympathy in a subjective way by focusing on emotion.

An example of the rational comments included that "This year, people experienced electric power shortages, and we need to prevent massive and severe blackouts in the future.....the government is willing to stably supply the electric power, not willing to make profit from the transmission towers.....The residents should understand the government makes every effort including proper compensation." An example of emotional comments was, "You go too far. People think nuclear facilities or waste recycling facilities should be built. Transmission towers are everywhere and do not deplete the land, so how could it affect such a small country? What the heck is that?"

3.3 Research Procedure

University students participated in the study and were provided with a free drink voucher for completing a survey. Recruitment was done through an email message, which was sent to students via email and included a URL for the online survey. When a participant clicked the URL, he or she was led to the survey website. The website first showed the news story along with comments. In the process, one of the 2 X 2 conditions of PP (majority vs. minority) and TC (rational vs. emotional) was presented. After reading the news story and comments, the participant moved to the next website which contained a questionnaire that asked the participant's position on the issue, the willingness to write a comment, communication efficacy, and other variables.

3.4 Research Participants

A total of 508 participated in the survey. Incomplete surveys were discarded, and the total of 487 responses consisted the sample. The sample consisted of 216 men (44.4%) and 271 women (55.6%). The average age of the participants was 24.06 (SD = 2.67) years old.

4. Result

4.1 Descriptive Analyses

Table 1 shows descriptive statistics by the different experimental conditions. CE was tabulated into two categories, internal and external CE, as illustrated in the methods section.

Table 1. Descriptive statistics

	Perception of public opinion							
	majority				minority			
	rational (N=116)		emotional (N=135)		rational (N=127)		emotional (N=109)	
	M	SD	M	SD	M	SD	M	SD
Willingness to post a comment	1.72	.65	1.64	.73	1.82	.73	1.61	.71
Communication efficacy								
internal	2.60	.88	2.56	.86	2.48	.85	2.56	.86
external	2.93	.88	2.72	.89	2.67	.76	2.69	.73

4.2 Communication Efficacy (CE) and Willingness to Post a Comment (WP)

The regression analysis was performed with CE as a prediction variable and WP as a dependent variable. Since there were two types of CE, regression analysis was separately performed with each CE as a dependent variable.

Table 2 presented the results. Model 1 in Table 2 showed that the internal and the external CE significantly affected the willingness to post a message (internal CE, $F(1, 485) = 41.44, p < 0.01$; external CE, $F(1, 485) = 32.44, p < 0.01$). As shown in the standardized coefficients, it was observed that the greater CE was, the higher PP was. Both internal and external CE positively contributed to PP (internal CE, $\beta = .28, t = 6.44, p < .01$; external CE, $\beta = .25, t = 5.70, p < .01$).

4.3 Moderating Effect of the Perception of Public Opinion (PP)

To test the moderating effect of PP, hierarchical regression analyses were performed. In the first stage, PP and CE were considered as the predicting variables. In the second stage, the interactive variable between PP and CE was added as the predicting variable. Each of CE, internal and external, was performed separately. The results were shown in Model 2 in [Table 2](#).

The analysis results of Model 2 showed that the moderating effect of PP was significant in the relation between external CE and PP (interaction variable, $\Delta R^2 = .01, p < .05$) but not significant in the relation between the internal CE and PP.

The result regarding external CE indicated that external CE affected WP ($\beta = .21, t = 4.13, p < .01$). The effect of PP to WP was also found to be significant ($\beta = -.25, t = -2.30, p < .05$), showing that when an individual perceives public opinion as opposing to one's opinion, he or she is more likely not to post a comment. In addition, it was observed that the relation between external CE and PP significantly changed depending on PP ($\beta = .23, t = 1.98, p < .05$).

Table 2. Summary on the analyses of contributing factors to willingness to post a comment(WP)

		β	SE	t	F	$df1, df2$	R^2	ΔR^2
Model 1								
	internal CE	.28	.04	6.44**	41.44**	1, 485	.08	-
	external CE	.25	.04	5.70**	32.44**	1, 485	.06	-
Model 2								
1 st	internal CE	.28	.04	6.47**	21.19**	2, 484	.08	
	PP ^a	-.04	.06	-.98				
2 nd	internal CE	.29	.05	4.60**	14.11**	3, 483	.08	.04
	PP	-.02	.19	-.13				
	internal CE X PP	-.03	.07	-.19				
1 st	external CE	.26	.04	5.78**	16.99**	2, 484	.07	
	PP	-.06	.06	-1.23				
2 nd	external CE	.21	.04	4.13**	12.69**	3, 483	.07	.01*
	PP	-.25	.19	-2.30*				
	external CE X PP	.23	.06	1.98*				
Model 3								
1 st	internal CE	.28	.04	6.50**	23.93**	2, 484	.09	
	TC ^b	.11	.06	2.45*				
2 nd	internal CE	.36	.05	5.87**	17.11**	3, 483	.10	.01#
	TC	.34	.19	2.49*				
	internal CE X TC	-.26	.07	-1.80#				
1 st	external CE	.25	.04	5.60**	18.45**	2, 484	.07	
	TC	.09	.06	2.06*				
2 nd	external CE	.26	.04	4.63**	12.65**	3, 483	.07	.00
	TC	-.01	.16	-.10				
	external CE X TC	.11	.06	1.01				

* $p < .05$, ** $p < .01$, # $p = .05$

Fig. 2 describes the moderating effect of PP. It shows that the relation between external CE and WP was significantly different depending on whether the climate was perceived as consistent with his or her opinion. More specifically, the effect of external CE to WP is greater in the majority condition than in the minority condition.

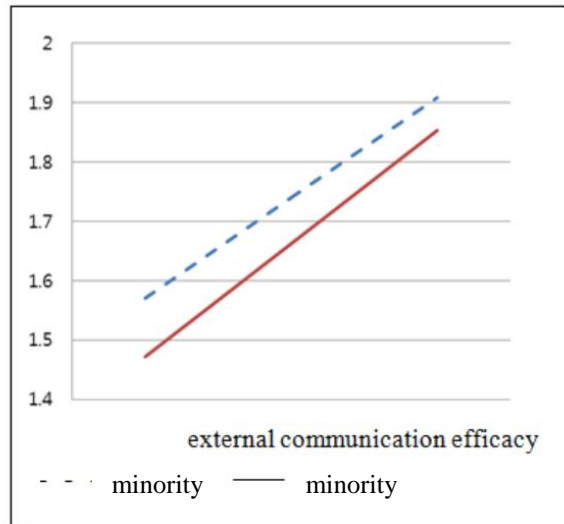


Fig. 2. The moderating effect of the perception of public opinion (PP)

4.4 Moderating Effect of the Tone of Comment (TC)

In the first stage, hierarchical regression analyses included TC and CE as the predicting variables, and in the second stage, the interactive variable between TC and CE was inserted as the predicting variable. The results are shown in Model 3 in Table 2.

As seen in Model 3 in Table 2, the moderating effect of TC approached the traditional level of significance, especially in relation to internal CE and WP (interaction variable of internal CE and ET, $\Delta R^2 = .01$, $P = .07$). However, the moderating effect of TC regarding external CE was not found to be significant.

These results indicated that internal CE directly influenced WP ($\beta = .36$, $t = 5.87$, $p < .01$) and TC as well exhibited the direct effect to WP ($\beta = .34$, $t = 2.49$, $p < .05$). Furthermore, since the interaction between internal CE and TC was significant, TC moderated the relation between internal CE and WP ($\beta = -.26$, $t = -1.80$, $p = .05$).

Fig. 3 shows the moderating effect of CT. The results in Figure 3 illustrate that firstly, when the internal CE is higher, the WP is higher. Secondly, WP is greater in the rational comment condition than in the emotional comment condition. And finally, the moderating effect of TC is illustrated: the extent of the effect of internal CE to WP is significantly greater in the emotional comment condition than the extent of the effect of internal CE to WP in the rational comment condition. These results mean that emotional comments strengthen the effect of internal CE to WP.

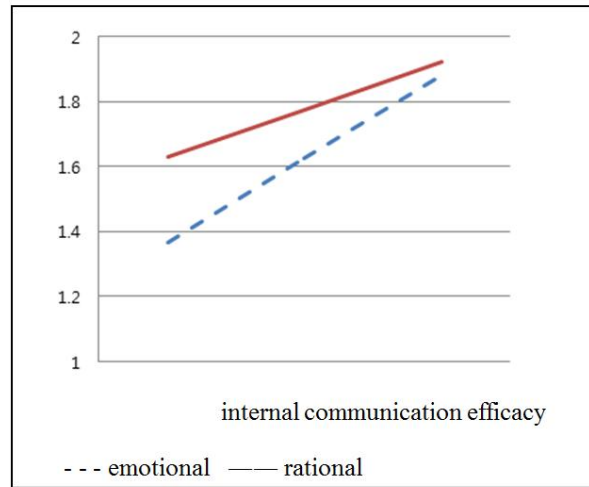


Fig. 3. The moderating effect of the tone of comments (TC)

5. Conclusions

This study analyzed who and how a user was likely to post a comment to a news story online. In particular, CE was expected to yield a direct effect to WP; a user with high levels of CE was more likely to post a comment. PP and TC were examined in regards to their moderating effects on an individual’s motivation to leave a comment to a news story online. That is, depending on PP (ET), the relation between CE and WP varied. The statistical analyses determined that firstly, CE influenced WP; and secondly, PP moderated the effect of external CE to WP; and finally, TC moderated the relation between internal CE and WP.

These results provide the implications of how to reshape comment sections online. First of all, it is imperative to enhance CE. As the direct effect of CE to WP attests, the more confident people are of their own communication practices, the more they are willing to post a comment.

Additional data echo these inferences. Open-ended questions in a survey asked the reasons for not posting a comment, and 350 responses were collected. Responses were categorized and Table 3 shows different reasons why a user would defer from posting a comment. Seen in Table 3, the biggest reason was ‘not effective’. ‘Not effective’ meant that the participants felt that leaving a comment did not do anything nor made any change (19.44%). These results converged into the importance of CE. How to encourage people to post a comment is maybe beyond the scope of this study. Nevertheless, it should be kept in mind that the effectiveness of communication practices should be acknowledged and efforts to make people more confident of communication practices are required.

Table 3. Categories of reasons why not to post a comment

	Not effective	Not appropriate	Voluntary refusal	demanding
N	76	71	68	58
(%)	(19.44)	(18.16)	(17.39)	(14.83)
	No need	Worry about criticism	Already posted	Total (%)
N	51	40	27	391
(%)	(13.04)	(10.23)	(6.91)	(100)

Note. multiple coding, N = 350

Another discussion point is related to the effect of PP. According to the spiral of silence theory, estimating the climate of public opinion affects the willingness to speak out. The results of this study presented mixed evidence. The effect of PP is pronounced only in the analyses of external CE.

These results implicate the applicability of the spiral of silence theory, questioning whether the spiral of silence theory can extend to online. The mixed results may be due to several reasons. First, people do not consider listed comments as public opinion and thus their likelihood to express opinion (WP for this study) is not dependent on PP. Users may think of comments as a random arrangement of a small number of people's opinions. Second, on the Internet a user can entertain anonymity and thus a user does not feel as much fear of isolation as in offline situations when he or she finds his or her opinion is in the minority of opinions. Better explanations should be sought only after the other studies which inquire specifically about the differences between online and offline.

The final discussion should be made in regard to TC. Although the optimistic claim about comments online supposes that if comments are written in logical and reasonable fashion, people are more encouraged to participate in interactions via comments, the results of this study show opposing evidence. Contrary to the claim, emotional comments, not rational comments are associated with WP. One explanation for this is that users may be emotionally activated and urged to post a comment as a reaction to emotional comments. The comments which are written after being emotionally stimulated may present emotional responses but not display logical arguments. This could explain why there exist more emotional comments than rational ones. An emotional comment may cause another emotional comment which results in more emotional comments, all of which make together a vicious cycle of emotional comments. The finding regarding TC may show a dark view of comment-posting. However, at the same time, the lesson also can be made that posting a comment takes responsibility and has an impact on others. Once these lessons are learned among users, the view of comment-posting may not be so gloomy.

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