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An Empirical Research of the Network Public Opinion Impact on the Information Openness of Government Affairs – Take "Hide and Seek" and "Deng Yujiao" Events for Example

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AN EMPIRICAL RESEARCH OF THE NETWORK PUBLIC OPINION IMPACT ON THE INFORMATION OPENNESS OF GOVERNMENT AFFAIRS
—take "hide and seek" and "Deng Yujiao" events for example

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Abstract

The influence network public opinion on the information openness of government affairs is studied after comparing the events of "hide-and-seek" and "Deng Yujiao". The linear dependence relationship exists between variation of information publicity about government affairs and the total number of the network public opinion, moreover, variation of information publicity about government affairs and the ratio that negative comments in total number of the network public opinion presences linear relation. Both total number and negative comment ratio play an improving role in the process of e-government publicly: total number and degree of e-government information openness exists stable positive correlation, while the positive correlation relationship between negative comments ratio and e-government information openness is instability.

Keywords: Network Public Opinion, Information Openness of Government Affairs, Empirical Research

Introduction

The Internet is called "the fourth medium", which is next to the traditional main mediums such as newspaper, radio and television. It has become an important channel, through which Netizens complain, express their views, and supervise public affairs. Studies of the internet users have shown that: the emerging features of the Internet have increasingly become the expression of popular channels and places of public opinion.

Network public opinion will become more and more powerful and influential. Even government can not escape its effect. With the booming of network, it may have strong impact on the government, which promotes the government to open more information.

Yet, related researches have not answered the following two problems until now. First, does the reasoning positive impact between the two is true and common? Second, which factors of network opinion bring such effect? Most scholars study this phenomenon from the perspectives of Communication Studies and Journalism. Almost no one make quantitative study and empirical study. So this paper chooses two hottest events in 2009 as cases to research the impact of network public opinion from the empirical perspective.

Research on the case "hide-and-seek"

(1) The whole incident

January 28, 2009, Li Qiao-ming, under criminal detention for the crime of illegal logging in forests, was detained in Room No. 9, Jin Ning County Detention Center. He was put into the same room with detainees Zhang Hou-hua, Zhang Tao who had been there under various pretexts. Li Qiao-ming was beaten several times with fists or slippers, resulting in many wounds on the head and chest. Then he was beaten again by violent boxing. Later on, Li Qiao-ming was hit the wall and fell to the ground unconsciously. He died on February 12.

After the incident, police station in Puning County announced that Li Qiao-ming died due to a game accident without in-depth investigation and evidence collection. This announcement aroused strong public doubts. Yunnan Police has to reply these doubts. Totally they promulgate information nine times. According to the time at which government opened

time	announcement
09.2.13 (17 : 04)	The police claimed that Li was hurt badly to death when played the game of "hide-and-seek"
09.2.20 (13 : 21)	Yunnan police claimed that "hide-and-seek" should be called "Xiazimoyu" and li's death is an accidental death
09.2.21 (01 : 34)	Yunnan police claimed there is no misconduct of policeman
09.2.21 (16 : 21)	Police commissioner of Jining said that the police are responsible for li's death
09.2.27 (17 : 18)	Investigation: Li died due to being assaulted by bullies in the same prison
09.3.04 (19 : 27)	Two policemen who involved in of "hide-and-seek" are arrested
09.3.06 (15 : 17)	China Supreme Procuratorate expose details and disposal of "hide-and-seek"
09.3.10 (01 : 40)	Deputy Chief Procuratoy of china supreme procuratorate claimed that bully phenomenon has exist for a long time
09.8.14 (13 : 21)	First-instance judgments sentences two policemen are condemned

Tab.1 proclaims of government at different times
information, this event is divided into nine periods which can be seen in Table 1.

(2) Data Collection

In this paper, public's reactions (comments on the network)[1] on Government's information at each time were divided into five categories, namely, criticism, doubt, support, neutrality and unsorted. Detailed data can be seen in Table 2.

Tab.2 reaction of public during each periods

time	Total Comm -ents	Displaye d Comm -ents	Critici -zing	Doub -ting	Suppor -ting	Neutral i -zing	Unsor -ted
09.2.13 -09.2.2 0	5491	1817	1003	736	27	37	74
09.2.20 -09.2.2 1	297	135	57	69	3	2	4
09.2.21 -09.2.2 1	2475	749	294	422	6	7	13
09.2.21 -09.2.2 7	960	325	164	133	23	3	13
09.2.27 -09.3.0 4	974	333	241	22	24	20	33
09.3.04 -09.3.0 6	10688	2692	1418	381	182	525	187
09.3.06 -09.3.1 0	2374	775	579	108	0	3	5
09.3.10 -09.8.1 4	2851	595	271	182	144	80	62
09.8.14 -09.8.1 6	872	154	65	25	33	12	19

(3) Variable selection and configuration

When choosing variables, the following factors have been considered:

First, we need a variable which indicates the level of participation. As the attention is a latent variable which can't be observed directly, so we have to choose another variable for substitution. The total number of comments is a right index. When collecting the relevant comments of each period, we can't see all comments because some of them are not displayed. Therefore, this article had better use the actual number

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[1] Note 1: The investigation of comments of each stage were collected from Sina.com, the time from February 13, 2009 to August 16, 2009

instead. So we regard the actual number of comments displayed online as explanatory variables, that is, x_1.

Second, we need a variable which indicates negative factor. This variable can be seen from the number of suspicion and criticism. From the table 2, we can see that the number of suspicion and criticism accounts a large proportion of visible comments, which is close to 90%. So we can not adapt the number of suspicion, the number of criticism and the number of comments displayed altogether. To avoid the multicollinearity, we have suspicion and criticism integrated into an indicator, that is, negative factor. Because criticism is much more intense than suspicion, they are given different weights. Here, we simply believe that a critical comment is equal to one and a half suspect comments. Thus, we can gain a new variable x_2 = (the number of suspicion +number of criticism)/ (number of all displayed +0.5*number of criticism)

We should set a variable Y, which represents the openness degree of government's affair, at every phase. To express the effect of the public opinions, we make a new variable dY which drive from the difference between the adjacent Y. The quantification of Y is from the Likert scale which investigate Netizens' evaluation of the government's dealing process. We believe that Netizens care about three factors. First, at which degree does the government description disclose the true scene; second, at which degree does the government explain the real reason of Li Qiaoming's death; third, at which degree does the government deal well with the event. 50 questionnaires had been handed out and 50 reclaimed, 47 of them are useful and the effective rate is 94%.

Therefore, this article will set the public opinion as promoting factor (explanatory variable)and set the variation of Administrative Information Disclosure degree as being promoted factors (interpreted variables). The values of these variables are shown in Table 3.

Tab.3 data of dependent variable and independent variable

Y	dY	x_1	x_2	Y	dY	x_1	x_2
5.1	2.6	1817	0.966358	11.4	3.7	2692	0.73743
7.7	0.5	135	0.944954	15.1	2	775	0.917332
8.2	1.6	749	0.96317	17.1	-0.1	595	0.805613
9.8	0.4	325	0.931204	17	-	154	0.656836
10.2	1.2	333	0.845645	-	-	-	-

(4) Constructing and analyzing of model

By using the Eviews, we make an OLS regression and the results are as follows:

$$dY = -2.433563 + 0.001407\, x_1 + 2.943143\, x_2$$

$$S.E\quad (2.960029)\ (0.000301)\ (3.166710)$$

$t = (-0.822142) \ (4.668755) \ (0.929401)$

$R^2 = 0.824797$ \quad $\overline{R}^2 = 0.754716$ \quad $F = 11.76915$

① Test of goodness of fit:

R-squared $R^2 = 0.824797$ ，

adjust R-squared $\overline{R}^2 = 0.754716$.

This means that x_1 and x_2 together explain as high as 75.5 percent of the variation in dY and that the sample regression function fit the observed values of the sample at a good level and the function can accurately reflects the characteristics of population.

② F test:

At the 5% significance level,

$F = 11.76915 > F_{0.05}(3-1, 9-3) = 5.14$.

This means the SPR is overall significant, that is, the variables x_1 and x_2 are together significant.

③ T test:

Because

$|t_0| \ \& \ |t_2| < t_{0.025}(9-3) = t_{0.025}(6) = 2.447$,

$|t_1| > t_{0.025}(9-3) = t_{0.025}(6) = 2.447$,

x_2 is not significant, x_1 is significant, that means the two variables are correlated. Therefore, by stepwise regression method, to test and solve the multicollinearity, make regressions with x_1 or x_2, the result can be seen in table 4.

Tab.4 unary regress result

Independent variable	x_1	x_2
Parameter estimation	0.001280	-3.728745
t statistics	4.816765	-0.624356
R^2	0.794529	0.061006
$\overline{R}^2$	0.760284	-0.095493

When x_1 is added to the regression, the adjust R-squared is most large. So, keep x_1, and add other variable, make regression again, the result can be seen in table5.

Tab.5 binary regression result

variable \ variable	x_1	x_2	$\overline{R}^2$
x_1 ，x_2	0.001407 （4.668755）	2.94314 （0.929401）	0.754716

By comparison, if we add x_2 to the regression, not only adjust R-squared decline, but the test parameters of x_2 become not significant. This shows that serious multicollinearity had been arouse by x_2 which should be removed. So final results are as follows:

$dY = 0.001280 \, x_1$

$t = (4.816765)$

$R^2 = 0.794529$ \quad $\overline{R}^2 = 0.760284$ \quad $F = 23.20123$

From the above result we can see that there is a linear relationship between variable dY and variable x_1 and that variable x_1 can spurs the government openness degree actively.

It can be concluded from the result above, the amount of Netizens who pay attention to the focus does spur the government opens provide more true information. So does the proportion of negative comments. But if we make regresses by setting dY as dependent variable and choosing either x_1 or x_2 as the independent variable, we will find the linear relationship between x_2 and dY is not notable.

Empirical research on case "DengYujiao"

(1) The introduction of the event

May 10, 2009, in the City of Badong County, Hubei Province, Deng Guida, 44, the director of the business promotion office in Yesanguan Township and Huang Dezhi, 41, who was the vice director of the office of business delegations went to a bathhouse with Deng Zhongjia, 45, another vice director of the same office. Deng Guida pulled out a stack of cash and tossed it at Deng Yujiao, a waitress of the bathhouse, and pushed her down twice on a sofa after she refused to provide "special services"(slang for sex). The waitress picked up a knife and fatally stabbed Deng Guida and injured Huang.

According to the government's bulletins, "Deng Yujiao" event can be divided into ten phases, which can be seen from the table6.

Tab.6 proclaims of the government at different times

(2) Data collection

As in the last case, in this case, the whole event is divided by the times when the government announced. There are ten important announcements, so there are ten stages. We collect comments[2] of each stage. And these comments are distinguished into five classes, namely: Criticizing, doubting, supporting, and maintaining neutral and the other. Detailed data can be seen from table 7.

Tab.7 public reaction of each period

time	Total Comm-ents	Displayed Comm-ents	Critici-zing	Doub-ting	Suppor-ting	Neutrali-zing	Unsor-ted
09.2.13 -09.2.20	4505	4411	2053	1845	0	0	513

[2] Note2: The investigation of comments of each stage were collected from Sina.com, the time from May12, 2009 to June 16, 2009

time							
09.2.20 -09.2.21	20244	6834	2883	3525	51	186	189
09.2.21 -09.2.21	28113	13589	3254	3133	886	906	5410
09.2.21 -09.2.27	9916	5624	3105	2430	16	70	3
09.2.27 -09.3.04	26658	4769	2470	1342	445	358	154
09.3.04 -09.3.06	1872	649	262	298	11	18	630
09.3.06 -09.3.10	88	88	31	30	8	14	5
09.3.10 -09.8.14	167	146	50	60	16	6	14
09.8.14 -09.8.16	395	395	286	65	6	22	16
09.6.16 -09.6.19	330	330	101	73	95	32	29

In this case, we choose variables with the same method which is applied in "hide-and-seek". Data of the variables we chosen can be seen in table 8.

Tab.8 data of dependent variable and independent variables

Y	dY	x_1	x_2	Y	dY	x_1	x_2
8.9	1.9	4411	0.905655	21.4	1.0	649	0.885897
10.8	3.1	6834	0.948523	22.4	-0.2	88	0.73913
13.9	3.2	13589	0.526682	22.2	0.7	146	0.789474
17.1	2.0	5624	0.987598	22.9	0.6	395	0.918216
19.1	2.3	4769	0.840606	23.5	-	330	0.590013

(3) Constructing model and analyzing

By using the Eviews, we make an OLS regression and the results are as follows:

$$dY = -2.191533 + 0.000281\, x_1 + 3.192260\, x_2$$

$S.E$ (1.057062) (3.66E-05) (1.159983)

t = (-2.073231) (7.672303) (2.751989)

R^2 =0.908519 $\bar{R}^2$ =0.878025 F =29.79359

① Test of goodness of fit:

R-squared R^2 =0.908519,
adjust R-squared $\bar{R}^2$ =0.878025.

This means that x_1 and x_2 together explain as high as 87.8 percent of the variation in dY and that the sample regression function fit the observed values of the sample at a good level and the function can accurately reflects the characteristics of population.

② F test:

At the 5% significance level,

$$F = 29.79 > F_{0.05}(3-1, 10-3) = 4.74.$$

This means the SPR is overall significant, that is, the variables x_1 and x_2 are together significant.

③ T test:

Because

$$|t_0| < t_{0.025}(10-3) = t_{0.025}(7) = 2.365,$$
$$|t_1|, |t_2| > t_{0.025}(10-3) = t_{0.025}(7) = 2.365.$$

The intercept should be deleted, x_1 and x_2 are significant, so we regress again, the result can be seen as follows.

$$dY = 0.000238\, x_1 + 0.826387\, x_2$$

$S.E$ (3.67E-05) (0.252482)

time	announcement
2009.5.12 （02：47）	First case notification of Badong police
2009.5.13 （02：45）	Second case notification of Badong police
2009.5.18 （15：20）	Third case notification of Badong police
2009.5.20 （20：00）	Badong county Security Bureau Li-Yong Yang said that it was really a very ordinary murder case from the entire episode
2009.5.23 （01：37）	Badong county government spokesman informed the latest progress about the case
2009.5.27 （17：05）	Badong County in Hubei Province spokesman release information
2009.5.31 （21：28）	Committee of Badong County Commission for Discipline Inspection informed: Officials involved in the case were expelled from the party and detained
2009.6.1 （10：12）	Deng Yujiao case had been investigated completely
2009.6.5 （08：05）	Deng Yujiao be prosecuted to the Badong County Court on charges of wounding with intent
2009.6.16 （15：17）	Deng Yujiao was exempted from criminal punishment, sentenced by Badong court

t = (6.482396) (3.273054)

R^2 =0.842983 $\bar{R}^2$ =0.820552

It is easy to see that the adjust model can pass both GFI test and T test.

① Test of multicollinearity

By using simple correlation coefficient test, we obtain the simple correlation coefficient r_{12} =-0.240135, which is less than 0.3.So we take it for

granted that there is no multicollinearity.

② Heteroscedasticity Test:

White Heteroskedasticity Test:

| F-statistic | 0.791431 | Probability | 0.618902 |
| Obs*R-squared | 5.119104 | Probability | 0.401518 |

By using White test, we gain

$$\chi^2_{0.05}(5) = 11.0705 > nR^2 = 5.119104;$$

So there is no Heteroscedasticity.

③ Autocorrelation test:

Breusch-Godfrey Serial Correlation LM Test:

| F-statistic | 0.754060 | Probability | 0.517352 |
| Obs*R-squared | 2.037291 | Probability | 0.361084 |

From BG test, we know

$$nR^2 < \chi^2_{0.05}(2) = 5.99147,$$

there is no autocorrelation.

So the regression analysis of model should be:

$$dY = 0.000238\, x_1 + 0.826387\, x_2.$$

The comparative analysis of the impact on e-government openness which comes from the public network opinion

From the analysis of the two events, we can make following conclusion:

(1) When doing regress with x_2 which representing the proportion of negative comments, it is not notable in the "hide-and-seek" event, but notable in "Deng Yujiao" event.

The reasons may be as follows:

Firstly, when "hide-and-seek" event spreads on the net, almost all people felt angry at the government's malfeasance, so when the authority announced that this event was only a accident, it arouse strong criticism. Therefore, the value of proportion almost all are near 90%, which is similar to a constant.

On the contrary, in the "Deng Yujiao" event, the result of the judgment is that Deng Yujiao is exempted from criminal punishment, so the people can feel easy at some degree. And the local authority replies actively. So the proportion of neutral and suspicion is larger than that in the of "hide-and-seek" event. And this leads to the variety of the value of the proportion of negative comments.

(2) The number of public comments displayed does have positive effect on the openness degree.

The variable x_1 which represents the number of public comments displayed passes the test in both models. According to this result, we can say that the positive relationship between x_1 and dY is true. Either

event arouses a strong attention from the public since it is made public. Millions of people express their opinions by making comments on the line to the government announcements. And the government can know the attitude of the public rightly by reading the comments, so they will take more right measures to deal with the hail of angry and suspicion. By this way, the public can have effect on the government, and the communication between both sides gets strong which can make the government's decision-making more scientific and more timely.

Conclusions and suggestions

From the empirical research and analysis above, it is easy to get the follow conclusions. There is linearly relationship between x_1 and dY; Not only the x_1 but also dY has positive effect on the openness degree; There exists a stable linear relationship between x_1 and the openness degree. But x_2 has no stable relationship with dY. According to the conclusions mentioned, we can put forward some suggests as follows:

(1) First, it is important for the public to pay attention to unfair events. Their attention and comments not only provide more messages that the government needs, but also have a certain press on the behavior and decision of the government.

(2) The emergence and the formation of network public opinion provide the relevant decision-makers a more comprehensive, more focused reflection of public opinion channel. Therefore, the government should pay full attention to the public demands which are conveyed through the Internet. Especially for some hot events which bring the local government negative image, the government should investigate at the first time. Once the investigation is true, the government should solve the problem as quickly as possible to promote the construction of local government.

(3) Internet public opinion is a "double-edged sword", which not only brings the government positive social effects, but also some negative social effects. For example, when some great serious public events took place, due to limited sources of messages, the report and dissemination of events may not be accurate. And this provides some people with ulterior motives spreading false news, rumors and misleading public opinion toward the space, which affect the social stability and development. Therefore, the government should popularize e-government widely in the country and strengthen government websites to inform the public in time the news which are related to great events or decision-making progress.

This article only extracts two hot spots of great public concerns in 2009. All the investigation, research and conclusions are about the two cases. So the

conclusions may not be universal, but the authors hope that the research work will be irradiative for the government to correctly guide public opinion and build a harmonious society.

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