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Online Opinion Expression and Me Too Movement:
Testing Spiral of Silence under Social Media Context

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Abstract

Based on the spiral of silence and cultivation theory, this study developed and tested a model of social media use, opinion congruence, fear of isolation, perception of reality and opinion expression behaviors on a controversial social issue under social media context. Results reveal that the spiral of silence theory is partly applicable. The findings from a survey of Weibo users show that social media use is a significant predictor of perception of reality, while it doesn't predict opinion congruence. And neither perception of reality nor opinion congruence has mediation effect on the effect of social media use on opinion expression. And opinion congruence will positively predict opinion expression, while neither fear of isolation nor perception of reality predicts opinion expression.

Keywords: spiral of silence, cultivation theory, social media, metoo movement

Online Opinion Expression and Me Too Movement:
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The spiral of silence theory states that individuals will be altered their opinion by the factors such as mass media and interpersonal networks, these factors indicate individuals fear to be socially isolated (Noelle-Neumann, 1974). According to this theory, people would change their willing of sharing their opinion according to the opinion of the majority. If they have the same opinion of the majority, they are more willing to speak out. On the contrary, they would be silent to avoid being isolated. In the opinion of Noelle-Neumann, it is a spiraling process that someone tend to speak up and the other to be silent, which increasingly establishes one opinion to the prevailing one. (p. 44.)

In 2017, there were more than 3 billion social media users globally. In the second season of 2017, there were 1 million new SNS users emerging per day. SNS has already became a vital part of modern society. It plays a role of communication, entertainment, and also as a channel for the younger generation to express themselves. Especially in these years, social media has become an effective way of collecting public sentiment.

The Me too movement (#metoo) was started in October 2017 by famous actress Alyssa Milano to encourage the sexual-assaulted girls to release their assaulted experience, in order to fight back the violators and protect other girls. This movement started from Hollywood, America and generally became influential globally. Similar movements also taken place in other regions and countries including China.

In January 2018, a female graduated from Beihang University named Luo Xixi released her experience of being sexual assaulted by her tutor, associated dean of Postgraduate School of Beihang University, Chen Xiaowu when she studied in Beihang

University. After several days of online discussion, this event got very famous in Weibo, the most popular SNS in mainland China. As a result, the violator Chen Xiaowu was dismissed from the university and his membership of Yangtze Scholar was also cancelled, but no criminal penalties were adopted. Just after the Chen Xiaowu event, in a short period of time, several female victims were encouraged to released their experience of being sexual assaulted by their tutors, teachers and male leaders. Many of these girls had graduated for a long time, and many events released happened even a decade ago. The positive climate of opinion that supports the assaulted girls encouraged them to show their experience to the public.

The purpose of this study is to find factors that will alter online expressions on Chinese social media like Weibo. When we do the literature review, we find there are limited researches studying Spiral of Silence theory under the circumstances of Chinese social media. Nowadays, since new media fast develop in China and everyone has the right to voice his or her views via social media (Zerback, T., & Fawzi, N. 2017). We find it is valuable to study the rapid growth of the Chinese social media users. The study of worldwide movement will give better understanding to public opinion expression on gender equality which can be applied to other social issues in the future.

Literature Review

Spiral of Silence and Opinion Expression under Social Media Context

The spiral of silence theory was originally introduced by Noelle-Neumann in 1974 for explaining the influence of perceived climate of opinions on individual opinion expression and eventually forms the public opinion (Noelle-Neumann, 1993; Scheufele & Moy, 2000). Because of the fear of isolation (Glynn, Hayes, & Shanahan, 1997), people are more likely to stay in silence when their approval opinion is opposed by the majority. As a result, the spiraling effect to boost the voice of the majority and inhibit the voice of the minority will be

observed, which eventually leads to the form of public opinion. A key proposition of this theory is that individual's perception that the majority supports his or her opinion is positively associated to the willingness of opinion expression behavior (Noelle-Neumann, 1974).

However, some researchers checked the relationship between perceived support and willingness to express to be weak at best (Glynn, Hayes, & Shanahan, 1997; Shanahan, Glynn, & Hayes, 2007). This has increased skepticism of the spiral of silence and a renewed interest in augmenting the theory was inspired. After that, researchers began to study on different variables that might affect outspokenness. Some scholars pointed out that people do not participate in all the conversations as they are perceived to turn to the topics that they care about more often than the others. That refers to the extent to which a person pays the most attention and shows a certain attitude'' (Krosnick, Boninger, Chuang, Berent, & Carnot, 1993, p. 1132). In addition, Moy, Domke, and Stamm (2001) found that individuals are more willing to express their opinions about the topics they consider more important.

As the use of social media is showing an increasing trend of becoming more popular, there is a controversial debate among scholars about if the spiral of silence theory can be applied under social media context. Some hold the opinion that it cannot be used because of the anonymous character of online opinion expression while others believe that the main opinion can still exist to be the norm when people express themselves on the Internet even though there are less limits for them. Some researches found that the effect of individual communication is much weaker than that of traditional media on the Internet. Ho and Mcleod (2008) demonstrated their findings that the theory can still predict individual will after comparing the consequences of people expressing their opinions in face-to-face chat room and Internet chat room. Meanwhile, the fear of isolation on the Internet is weaker than that in real world. Roberts, Wanta and Tzong-Hong (2002) conducted a research about people's

online opinion expression in 1996 American election debate, which proved the theory is still applicable. They also noticed in the research that people tend to consider the side which media report more on to be mainstream during a controversy.

Besides these moderating effects social media have on spiral of silence theory, it is shown that the use of social media is positively associated with climate of opinion (Hampton, Shin, & Lu, 2017). Social media tend to show users prioritized content (Hamilton, Karahalios, Sandvig, & Eslami, 2014). Users on Weibo will be exposed to the content which is congruent to their favor. Though this way, users will get a high perceived opinion congruency on Weibo.

Cultivation Theory and opinion expression under Social Media Context

Apart from the spiral of silence theory, our research also uses cultivation theory (Gerbner & Gross, 1976) to analyze “perception of reality” as a mediating variable in the research. The primary point of cultivation theory states that the more time people spend on watching television, the more likely they are to believe social reality aligns with reality portrayed on television. Messages and pictures from television media can largely influence the way people perceive the real world, especially those who rely heavily on TV. While cultivation theory originates in television related research, many scholars are skeptical about whether cultivation theory would be applicable with the raising significance of new media. “Media technology has never been static, and that there will always be new forms of media.” Some researchers (Morgan, Shanahan & Signorielli, 2015) applied cultivation theory to the study of new media by suggesting to take up a big data approach rather than using older methods for cultivation analysis such as counting hours of television viewed. However, as long as these media still convey messages, and since those messages have influence on us, cultivation theory still works for new media.

The cultivation theory is applied to a research studying on the influence of social media on the cultural adaptation of new immigrants (Stephen M. Croucher, 2011) . The researcher found that for those immigrants who are still in the stage of studying about the new environment, their thoughts about the new environment are largely affected by what is shown on the dominant social media if they are the users of these media. He also believes that this cultivation effect will influence the way immigrants behave in the new environment in the reality.

In a study about crime(Chiricos et al. 1997, 2000; Dowler 2003; Eschholz et al. 2003), they think the details in local news and drama programs make the public more fearful to crime, so the public tend to show their support to the punitive juvenile and criminal justice policies on the Internet(Gilliam and Iyengar 2000; Goidel et al.2006; Kort-Butler and Sittner Hartshorn 2011; Rosenberger and Callanan 2011).

Through the literature review, we import key concepts to understand the primary idea of the two theories and previous research findings as well as the dynamics of related fields including social media and opinion expression. Based on that, we also create a theoretical framework that incorporates concepts taken from all the relevant fields together to conduct the research studying the factors that influence public opinion expression on Chinese social media.

In a study about post-disaster recovery(John et al.2015), cultivation theory is applied that different emotions and perceptions of the disaster have different influences on people's behavioral intentions. According to their research, the perception of strong bonds in society and families increased people's intention to communicate with others, and to act altruistically or prepare for future disasters. Based on that, we can assume that cultivation theory still

performs in the environment of social media. And perceptions established via mass media and social media can make an effect on people's behavior.

Based on the literature review of spiral of silence theory, we develop the independent variables of Climate of Opinion, Fear of Isolation. To take the effectiveness of cultivation theory on this social media context, we import Use of Weibo as the independent variable, and perception of reality as the intermediate variable.

The dependent variable is Weibo users' opinion expression on me too movement.

Based on the literature review and variables above, we develop our integrated theoretical framework.

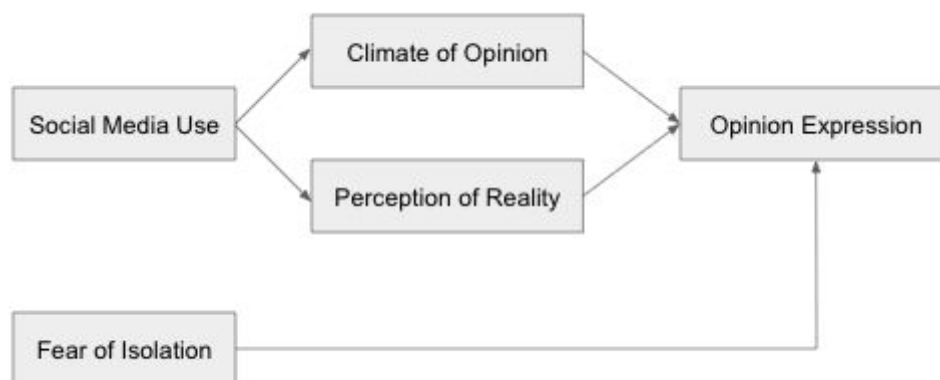


Figure 1. A model of social media use, climate of opinion, perception of reality, fear of isolation and opinion expression on social media environment

To test the effectiveness of this framework on social media environment, the following research hypotheses and questions are proposed :

H1 Social media use will positively predict opinion congruence on me too movement.

H2 Social media use will positively predict perception of reality of me too movement.

H3 Opinion congruence will positively predict opinion expression in Weibo on me too movement.

H4 Perception of reality will positively predict opinion expression in Weibo on me too movement.

H5 The effect of social media use on opinion expression in Weibo on me too movement is mediated by opinion congruence.

H6 The effect of social media use on opinion expression in Weibo on me too movement is mediated by perception of reality.

H7 Fear of isolation will negatively predict opinion expression in Weibo on me too movement.

Method

Population and Sample

We conducted a cross-sectional survey to test hypotheses. The population was general users of Sina Weibo, which have reached to over 431 million, making Weibo the biggest social media platform in China. And Weibo is the main communication platform of me too movement.

The survey was conducted online in November 2018 through WeChat and Weibo. WeChat is the largest instant messaging software in China, while Weibo is the largest social media platform in China. The questionnaire was sent to active WeChat and Weibo 350 users. Eventually 202 respondents completed this survey. There's a brief introduction of me too movement at the beginning of questionnaire to make all the respondents know this issue.

Measurement

In the spiral of silence, climate of opinion refers to the people's expression will be influenced by their circumstances. However, in the real world we cannot directly measure the climate of opinion, we can measure how congruency of people's expression. *Opinion congruence* refers to individuals' opinions to me too movement from six groups of people:

(a) co-workers, (b) friends, (c) family, (d) people followed by respondents, (e) respondents' followers, and f) respondents. A congruence index was used to calculate the congruence of individuals' opinion with the opinion climate. A continuous scale with “strongly disagree” (1) to “strongly agree” (5) was tabulated. A composite score will be calculated to represent individuals' opinion congruence.

Fear of isolation was operationalized as the negative emotions regarding a conversation. Adapting from a previous study by Scheufele et al. (2001):

a 6-item index measured fear of isolation. On a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), participants rated their level of agreement with 6 statements like “I worry about being isolated if other people disagree with me”. The the mean score of all six items is used to measure fear of isolation, higher scores indicating higher fear of isolation.

Social media use refers to people's habits to use Weibo from five aspects, and these questions proved by Goulet, 2012; Hampton, Goulet, Marlow, & Rainie, 2012:

a) browse, b) tweet, c) comment, d) give likes, and e) private message. Respondents were asked to rate on a five-point verbal frequency scale (1 = never, 5 = every day). The reliability of self-reported, social media use in this way has been proved in former studies (Goulet, 2012; Hampton, Goulet, Marlow, & Rainie, 2012), in which researchers compared self-reported data with transactional log data from Facebook. (Social media and political discussion: when online presence silences offline conversation, Keith N. Hampton, Inyoung Shin & Weixu Lu)

Perception of reality refers to individual's knowledge, beliefs and emotion to sexual harassment(Shanahan and Morgan, 1999). Adapting from other researchers' study about cultivation theory (Potter, 2014; Khan, 2016), participants were asked by a 3-item composite measure :

On a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), participants ranked their level of agreement with these aspects:
(a) "Sexual harassment is a serious social problem," (b) "The existing legal system is insufficient on the punishment for sexual harassment,"
(c) "I am afraid of being sexual harassed." A composite index was made from the mean score of all items, with higher scores showing greater perception of reality.

Opinion expression refers to individual's willingness to speak out on social media environment. Adapting from a study by Neuwirth and other researchers (2007), participants were asked to think about the likelihood they would choose from five different opinion expression strategies on a 5-point scale varying from 1 (strongly disagree) to 5 (strongly agree) with the following statements:

(a) "I will post or retweet the Weibo about me too movement.", (b) "I will comment the Weibo about me too movement.", (c) "I will give a like to the Weibo about me too movement.", (d) "I will discuss the controversial views about me too movement with others on Weibo.", and (e) "I will say nothing on Weibo about me too movement."

Result

Of the 202 respondents, with the 57.9% people are between 15-25 years old (SD=.923). The respondents' education level were very concentrated 86.6% respondents went to university, and 48.0% respondents are students. Weibo was kind of important

platform for 33.7% respondents, and these respondents would like to browse Weibo every day. Only 4.5% respondents would like to comment on Weibo.

For testing, 95% level of confidence is used and the number of bootstrap sample for percentile bootstrap confidence interval is 5000.

To test hypothesis 1, the social media use will positively predict opinion congruence on me-too movement, the simple linear regression was performed. The social media use did not positively predict opinion congruence ($\beta = .023, p > 0.05$). The significant level is 0.548 which is high, so the hypothesis is rejected. The use of Weibo did not positively predict opinion congruence on me-too movement.

Hypothesis 2, social media use will positively predict perception of reality in Weibo on me too movement, it is supported. Simple linear regression test is performed, and the result is significant ($\beta = .174, p < 0.05$). Hence, the social media use and perception of reality in Weibo on me too movement is related.

Hypothesis 3, the opinion congruence will positively predict opinion expression in Weibo on me too movement, the multiple regression was performed. The opinion congruence positive predict on opinion expression in Weibo on me too movement ($\beta = .158, p < 0.05$). The hypothesis 3 is supported.

Hypothesis 4, perception of reality will positively predict opinion expression in Weibo on me too movement, it is not supported. The multiple regression was performed. The perception on reality predict opinion expression in Weibo on me too movement is not significant ($\beta = .090, p > 0.05$), therefore there is no relationship between perception of reality with opinion expression in Weibo on me too movement.

H3 and H4 data are from the belowing table:

ANOVAa

模型	平方和	自由度	均方	F	显著性
1 回归	16.115	1	16.115	56.018	.000b
残差	50.630	176	.288		
总计	66.744	177			
2 回归	18.390	3	6.130	22.058	.000c
残差	48.355	174	.278		
总计	66.744	177			

a 因变量: opinion_expression
b 预测变量: (常量), media_use
c 预测变量: (常量), media_use, climate_of_opinion, perception_of_reality

系数a

模型	未标准化系数	标准误差	标准化系数	t	显著性
	B	标准错误	Beta		
1 (常量)	2.514	.119		21.144	.000
media_use	.332	.044	.491	7.485	.000
2 (常量)	2.123	.255		8.328	.000
media_use	.311	.045	.461	6.937	.000
perception_of_reality	.090	.062	.100	1.457	.147
climate_of_opinion	.158	.078	.134	2.012	.046

a 因变量: opinion_expression

Hypothesis 5, the effect of social media use on opinion expression in Weibo on me too movement is mediated by opinion congruence, is not supported. The hypothesis was tested by mediation analysis to estimate bootstrap with 5,00 samples through PROCESS. Opinion congruence is the mediator of social media use on opinion expression in Weibo on me too movement is significant ($\beta = .163, p < 0.05$). However, the confident interval of opinion congruence in the indirect effect of social media use on opinion expression in Weibo on me too movement is CI [-.010, .026] is include zero in this interval. That means the result is not significant, and opinion congruence is not the mediator on social media use affect opinion expression in Weibo on me too movement.

Hypothesis 6, the effect of social media use on opinion expression in Weibo on me too movement is mediated by perception of reality, is not supported. The hypothesis was tested by mediation analysis to estimate bootstrap with 5,00 samples through PROCESS. Perception of reality is the mediator of social media use affect on opinion expression, the result is not significant ($\beta = .104, p > 0.05$). Meanwhile, the confident interval of perception of reality in the indirect effect of social media use on opinion expression is CI [-.005, .041] which also include zero in the interval, and the result is not significant. Therefore, it suggests that these two mediators in our model are not mediators of social media use on opinion expression on Weibo in me too movement, because the result of both mediators are not significant.

The following chart explain the hypothesis 5 and hypothesis 6 in our study, and this table is from PROCESS, and include the total, direct and indirect effect on the mediations.

```

OUTCOME VARIABLE:
  opinion_
Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .491      .241      .291     27.521     2.000     173.000     .000
Model
      coeff      se      t      p      LLCI      ULCI
constant     2.622     .196    13.391     .000     2.236     3.009
media_us      .333     .045     7.419     .000     .244     .422
fear_of     -.036     .054     -.672     .502    -.142     .070
***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****
Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI
      .333     .045     7.419     .000     .244     .422
Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
      .312     .045     6.899     .000     .222     .401
Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
TOTAL      .021     .015     -.006     .053
percepti   .017     .012     -.005     .041
climate_   .004     .009     -.010     .026
(C1)      .013     .014     -.020     .039

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Hypothesis 7, fear of isolation will negatively predict opinion expression in Weibo on me too movement, is not supported. From the multiple regression, the significant level of fear

of isolation is .240, that means fear of isolation would not predict users' opinion expression in Weibo on me too movement. And H7 will be rejected.

The following chart explain the relationship between these independent variables and dependent variable, and fear of isolation is not significant with the relationship of opinion expression in Weibo on me too movement.

系数a

模型		未标准化系数		标准化系数		t	显著性
		B	标准错误	Beta			
1	(常量)	2.518	.120			21.046	.000
	media_use	.330	.045	.489		7.400	.000
2	(常量)	2.126	.258			8.226	.000
	media_use	.310	.045	.459		6.854	.000
	perception_of_reality	.090	.063	.099		1.436	.153
	climate_of_opinion	.160	.079	.136		2.029	.044
3	(常量)	2.253	.280			8.051	.000
	media_use	.312	.045	.461		6.899	.000
	perception_of_reality	.104	.064	.115		1.638	.103
	climate_of_opinion	.163	.079	.138		2.062	.041
	fear_of_isolation	-.063	.054	-.078		-1.178	.240

a 因变量: opinion_expression

Discussion

This study was designed to examine whether the spiral of silence still exist under social media context. With the rapid development of new media, social media is becoming an important part in individual's life, leading to the increase of online opinion expression and communication, especially on some controversial topics in the society. To better understand what will affect individual's opinion expression behavior about social issues under social

media context, this study also introduced perception of reality as an mediating variable to test its effect based on the cultivation theory.

The previous findings in literature review pointed out that the use of social media is positively associated with climate of opinion (Hampton, Shin, & Lu, 2017). This study examined this hypothesis and the result indicated that social media use had no influence on opinion congruence, as shown in the result of H1. One possible explanation is that individual's perception of climate of opinion (measured as opinion congruence in the questionnaire) is a complicated process with mutual influence of different factors. With so many channels and platforms to be exposed to all kinds of information, the influence of social media on one's perception of climate of opinion can be insignificant.

Besides, social media use was found to be a significant predictor of perception of reality in this study. H2 could be confirmed based on the result. The cultivation theory stated that the more time people spend on watching television, the more likely they are to believe social reality aligns with reality portrayed on television. As social media has become a prevalent communication channel, it's meaningful to test the theory under social media context to better study the factors that affect individual's expression behavior on social media. The result suggests that the more people use social media, the more serious they consider the sexual harassment problem is in the reality. However, the finding still has some limitations. Since the study just collected the data of general use of social media, not specifically on topic of Metoo movement, the effect of social media use on perception of reality still need to be tested under other topics.

For H3 and H4, opinion congruence was found to be able to positively predict opinion expression on Weibo while perception of reality was proved to have little influence on opinion expression on Weibo. The acceptance of H1 supported the previous finding we

learned from the literature review (Wanta and Tzong-Hong, 2002) that people's online opinion expression is still influenced by climate of opinion, which suggests the spiral of silence theory is still applicable under social media context. To be more specific, the higher the opinion congruence is, the more the users are willing to express their opinions on social media. However, the rejection of H4 is a little bit different from what showed in the previous literatures. This study used a 1-5 scale to measure the perception of reality as individual's knowledge, beliefs and emotion to sexual harassment. Different perception of reality will lead to different extent to which the individual cares about the topic. As pointed out by some scholars (Krosnick, Boninger, Chuang, Berent, & Carnot, 1993, p. 1132) in previous study, people do not participate in all the conversations as they are perceived to turn to the topics that they care about more often than the others. However, in our study has perception of reality has no relationship with opinion expression in Weibo on me too movement. We think this situation happened maybe the sample bias occur or because we are under the different situation compares to the scholars.

Hypothesis 5 in our study is rejected, and opinion congruence is not a mediator of social media use on opinion expression. Opinion congruence does not have relationship with social media use but it has relationship with opinion expression. We think opinion congruence may not be the mediator but it could be the independent variable on opinion expression. Because it does not have relationship with social media use but it has relationship with the opinion expression. Meanwhile, for these H5 and H6 which both predict the mediation effect on social media use effect on opinion expression in Weibo on me too movement is not true. Our respondents dislike forwarding and commenting messages in Weibo, and this behavior is not affect by opinion congruence and perception of reality. We

suppose that there could be other mediators exist but not the opinion congruence and perception of reality we tested in this study.

Hypothesis 6 in our study this hypothesis is rejected, perception of reality is not the mediator of social media use on opinion expression in Weibo on me too movement. However, perception of reality has sort of relationship with social media use and no relationship with opinion expression, we predict perception of reality may not be the mediator of social media use on opinion expression. Instead, perception of reality could be the dependent variable to social media use.

The study also rejected H7 that fear of isolation would negatively predict online opinion expression, which matches with the previous finding that the fear of isolation on the Internet is weaker than that in real world. So it is possible that the influence of fear of isolation on opinion expression is largely weakened under social media context.

The findings of the study indicated that the spiral of silence theory is partly applicable to the opinion expression about Metoo Movement under social context. Just as what suggested in the previous studies, the main opinion can exist to be the norm for online opinion expressions, so climate of opinion still works under social media context as a higher opinion congruence will result in a higher expression willingness. However, what needs to be addressed is that the use of social media doesn't have direct influence on opinion congruence. In addition, this study supported the application of cultivation theory under social media context by proving that social media use is a significant predictor of perception of reality. For some reason, perception of reality doesn't positively predict the opinion expression on Me Too Movement on social media. Some possible explanations were proposed before in the discussion of H4. Apart from that, corresponding to the previous findings, the fear of isolation is much weaker on social media than in the reality. Therefore, sometimes even

people feel their opinions are different from the majority, they have larger chance to express their real opinions on social media than in the reality.

The results of the study offered some new insights. Further study needs to be conducted to figure out either climate of opinion is an independent variable or the mediating variable of other independent variable rather than social media use in explaining its influence on opinion expression on social media. Also, further research is required to examine if there's other mediating variable between social media use and online opinion expression or the use of social media can directly predict online opinion expression.

Some limitations did exist in this study. The first can refer to sampling bias. Considering the time and cost, this study used convenience sampling. Since the sampling frame is not know, and the sample is not chosen randomly, the inherent bias in convenience sampling means that the sample is unlikely to be representative of the population being studied. This undermines the result of generalisations from the sample to the population being studied. The second limitation can be resulted from the questionnaire. Previous literature had explained that social media uses algorithms to show users a prioritized subset of all shared content, therefore users would be exposed to the content which is congruent to their preference. The questions of the questionnaire are too general to correspond to the individual perception of each respondent, which can lead to a huge divergence regarding the answers of different respondents that influence the final result.

For improvement, a more reliable sampling method is required and the questionnaire also needs to be improved to get a better result. To achieve it, we suggest to search and review more related literature to develop a valid measurement.

Conclusion

This study explored whether the effect of spiral of silence theory still exist in social media. The findings provide insightful elucidation on how main opinion in social media affects opinion expression in a social focus with situation awareness integrated into the process. The study makes contribution to the field of interpersonal communication in the following aspects:

First, the study confirms that the spiral of silence theory is partly applied in social media. People holding main opinion still have enough willing to express. However, the restriction of fear of isolation is much weaker than that in real world, so people have different opinion have more chance to speak out. The findings reveal which part should be chosen when there is a study related with the spiral of silence in social media.

Second, by using several dimensions of the potential factors that may have influence to test the validity of the spiral of silence in social media context, this study fill the blank in study of this field, broadening the recognition in online opinion expression. The findings will provide certain support to later study.

Third, the findings clarify that people are more willing to express different opinion online than in the real world, which provide a reliable method to collect people's actual perception about some social issues. When there is a study involved something controversial or awkward to answer face to face, we can consider to collect data via Internet to confirm the validity of data.

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