

**Media Usage Pattern and Media Effects on Attitudes toward the Umbrella Movement:  
A Comparative Study between College Students from Macau and Mainland China**

Ieong Meng U

Wang Hongyu

**Abstract:**

The present study examines the media usage pattern within Macau and mainland Chinese college students and how media shapes their attitudes toward the Umbrella Movement. Research findings are as follows. First, although Macau students in general show more support on the Umbrella Movement than mainland China students, the magnitude is moderate (4.7 in 10-point scale). Second, the two types of students have divergent pattern in media consumption but the differences are not clear-cut. While mainland China students read less Hong Kong and Macau newspaper and more rely on WeChat in receiving news, they have the same preference as Macau students in some pro-democracy media like Apply Daily and foreign media. Third, exposure to the same type of media exerts heterogeneous effects on students. Mainland China students only increase their support toward the Umbrella Movement under intentional exposure to neutral media. In contrast, changes in political attitude in relative political moderate Macau students can be caused by either intentional exposure or incidental exposure on pro-democracy media. We finally discuss the implications on the above findings in studies of Macau Politics and political communication.

## **Introduction**

Though the relationship between media exposure and political attitude has been long attracted scholarly interest, censorship in authoritarian regimes poses a greater challenge to scholars as variations in media exposure are limited (e.g., Lu, Aldrich, and Shi 2014; King, Pan, and Roberts 2013; Lorentzen 2013). Besides the empirical challenges on research design, the selective exposure thesis argues that media has limited impact on political belief because the causality runs from political beliefs to media selection, rather than vice versa (Garrett 2009; Stroud 2008). People with strongly held political predispositions usually seek information from media sources which conform to their pre-existing political views. To cope with the above problems, the present study compares how media shapes college students' attitudes toward the Hong Kong Umbrella Movement happened in 2014 between Macau and Chinese college students studying in Macau. We aim to answer the following two research questions. First, do local and mainland Chinese students exhibit different patterns of media usage? Second, and if so, does exposure to the same type of media exerts differential effect on the above two types of students' attitudes toward the same political incident? We argue that effects of media exposure on political attitude are not uniform because pre-existing political predispositions serve as moderator. Students tend to resist contradicted information if they have already taken a preconceived notions. In contrast, students with a moderate mindset are more likely influenced by media with a clear political stand. (Wohn and Bowe 2016).

Before moving to the empirical results, it is worth to explain the rationality behind selecting the Umbrella Movement and college students in Macau as target in analysis. First, the Umbrella Movement is the most controversial political event in Hong Kong and Macau

in the recent years.<sup>1</sup> During the 79 days long protest, numerous news reports, comments and debates rise daily that makes the event an excellent case to observe how media shapes students' political attitude because technically it will be very difficult for one to isolate themselves from the debates raised by the incident even for political apathy (Jeong 2019). Second, Macau has a unique political culture. In one hand, Macau people are far less keen on nationalism as they are isolated from China's highly political manipulative education and media system (Huang 2015; Huang, Wang, and Shao 2018). On the other hand, Macau people also seems not as interested in democracy as Hong Konger, this partially explains why social movements struggling for democracy have never happened in the city's history. Macau people are generally politically moderate if they are in compare with Hong Konger or Chinese (Lam 2010; Yee 1996, 2001; Lo 2007). Third, Macau features a rich and diversified media environment because no official censorship is implemented under the principal of "One country, Two systems", this guarantees that media coverage on the Umbrella Movement is extensive, divergent and covers different positions on political spectrum (Lee 2007; Chan 2017; Guo 2011). As mainland China students have convenient access to media sources which may be filtered in China, exposure to a diversity of voices or opposing views may has an influence on their political attitude (Han and Chen 2016). Lastly, Hong Kong is more progressive in democracy than Macau; this generates a greater difficulty in identifying the effect from media exposure because students' are more likely to have firsthand experience in political participation in practice which also have an

---

<sup>1</sup> The Hong Kong Basic Law Article 45 stipulated "The ultimate aim is the selection of the Chief Executive by universal suffrage upon nomination by a broadly representative nominating committee in accordance with democratic procedures". The main purpose of the Umbrella Movement is to urge the China government reconsidering the scheme on the 2017 Chief Execution Election. For a more detail background introduction, see Ortmann (2015).

influence on their political attitude. In short, a rich media environment, the presence of two groups of students with different pre-existing views toward democracy, the lack of firsthand experience of democracy, all these conditions make Macau more or less similar to a setting of natural experiment in investigating whether political predisposition moderates the relationship between media exposure and political attitude.

In below, we will first discuss the political spectrum in Macau's media environment. We then derive hypotheses on media use and its influence on political attitude. Finally, we present the data, methodology, results and discuss how the research findings make contributions to the existing literatures in conclusion.

### **Media Political Spectrum in Macau**

It has more than 10 local newspapers in various languages (Chinese, English and Portuguese) despite Macau is a tiny island city of 30 square kilometers. The local press is dominated by a pro-establishment newspaper — *Macau Daily*, which occupies 90% share of the local newspaper circulation. Although English and Portuguese newspapers are usually more outspoken, they count less than 10% circulation. The remaining share is dominated by a pro-establishment newspaper — *Macau Daily*, which occupies 90% the local market. As a result, it is somewhat ironic that, due to the tedious and conservative style in local media though there are some pro-democracy media like *All About Macau* and *Macau Concealers* appeared in the recent years (Su 2017; Yin 2009), most Macau people are more prefer to read Hong Kong newspapers with Chinese and foreign media as complement. In general, media in Macau can be classified into three groups based on their political spectrum: pro-establishment, neutral and pro-democracy.

The pro-establishment media includes Macau Daily, *Ta Kung Pao*, *Sing Tao Daily*, *Oriental Daily* and other Chinese newspapers. *Ta Kung Pao* is a traditional leftist newspaper in Hong Kong since 1949, while *Sing Tao Daily* and *Oriental Daily* shifted to a pro-China position after the handover in 1997. Those newspapers are politically conservative and incline to supporting the current regime in China (Chan and Lee 2007; Kwong 2015; Lee and Chan 2009). Taking the news reports on Umbrella Movement as example, the incident is frequently described as chaotic and accused as funded by ill-defined hostile foreign forces. The pro-establishment newspapers also encouraged the Hong Kong society to accept the election scheme declared by Beijing.

*Ming Pao*, *Initium Media* and *Hong Kong Economic Journal* have taken a neutral stance., *Ming Pao*, for example, treated itself as an independent and impartial arbitrator in the political disputes between the Hong Kong Special Administrative Region (SAR) government and protesters (Lee and Lin 2006). It emphasizes professional norm of objectivity and rational discussion in reporting news and adopts a language and style that is moderate, soft, and less critical than other pro-democracy newspapers (Kwong 2015; Lee 2007; Lee and Lin 2006). Some scholars interpreted *Min Pao*'s stance is a kind of pro-China stance disguised as journalistic neutrality because it is impossible to be completely neutral in discussing a controversial issue such as universal suffrage in Hong Kong; this kind of professional norm indicates a lack of commitment to protect local interests, which in return further constrains the watchdog function that are supposed to be served by journalism (Lee 2007).

Unsurprisingly, pro-democracy media reported the Umbrella Movement in a very different tone in compare with the newspapers mentioned above. *Apple Daily* openly

supported the movement and urged the Hong Kong SAR government to make concessions with protesters. Online media like *Stand News* and *100 Most* regarded themselves as the true defenders of Hong Kong's interests and striving to protect local freedom and autonomy (Lee and Lin 2006). Foreign media also praised the Umbrella Movement as a struggle for democracy. The Time Magazine, for example, published one article titled "The Umbrella Revolution: Hong Kong's fight for freedom is a challenge to China" (Kwong 2015). While the New York Times Magazine published a long piece with an ending, "The young people through his Umbrella Revolution have demonstrated that they have a mind of their own....They're prepared to stand up and be counted"<sup>2</sup>.

Because the target group in the present study is college students, we particularly pay attention to the leverages from social media like Facebook and WeChat as they are now the major sources for young people in information gathering from friends, family members, and/or newspapers. Social media usually does not itself product information but serve as the platform of news flow, thus they may regard as online extension of the political cleavages in print newspapers. According to our survey, around 64% respondents read news on social media daily; only 25.2% respondents rely on print newspapers. 62.1% of students said that they had ever discussed the Umbrella Movement with others on Facebook; the ratio is around 64% in WeChat. In other words, both intentional and incidental media exposure in our dataset are mainly through news articles that posted in social media.

[Table 1 is inserted here]

### **Media Usage Patterns and the Influence of Media on Political Attitude**

---

<sup>2</sup> Lauren Hilgers. 2015. "Hong Kong's Umbrella Revolution isn't over yet", *The New York Times Magazine*, Feb 18. [http://www.nytimes.com/2015/02/22/magazine/hong-kongs-umbrella-revolution-isnt-over-yet.html?\\_r=1](http://www.nytimes.com/2015/02/22/magazine/hong-kongs-umbrella-revolution-isnt-over-yet.html?_r=1),.

Existing literatures suggested people either intentionally seek out political information (also known as active learning) or accidentally encounter such information on social media—a form of passive learning. Attitude-consistent rather counter-attitudinal information is more preferable simply because exposure to opposing views increases psychological discomfort associated with uncertainty and exposure to agreeable information reinforces their preexisting views (Stroud 2008). People with strong political beliefs are more likely to engage in intentional exposure to likeminded media for cognitive consistency and less receptive to media content that contradicts to their prior beliefs (Garrett 2009; Stroud 2008). Exposure to unwelcome information sometimes can trigger a strong backfire effect among those who hold strong opinions about certain issues (Nyhan and Reifler 2010). China's younger generation are reported to take a strong pro-China stance, especially among those studying abroad (Wang 2012). As mainland China students in Macau usually come from relative affluent family, it is rational for them to support the existing regime for their material well-being, we expect that they prefer pro-establishment media over pro-democracy media (Hyun and Kim 2015). Routines and habits are also indispensable in guiding media selection, previous studies reported that more than half of all media behaviors are habitual rather than active selection from reading a newspaper at breakfast table, to checking emails upon arrival at school or work, to TV-watching during dinner (Larose 2010; Wohn and Bowe 2016). This leads us to predict that mainland Chinese students in Macau prefer WeChat over Facebook as a primary source of information gathering because most of their friends using WeChat instead of Facebook which is blocked in China indeed. In summary, students from local and mainland China

likely are expected to have different media usage pattern due to their divergences in pre-existing political belief, media usage habit, and personal social networks

*H1a: Mainland Chinese students are less likely to consume Macau and Hong Kong media in general, and pro-democracy media in particular.*

*H1b: Mainland Chinese students prefer WeChat over Facebook as a primary source of information gathering, the pattern is vice versa within Macau students.*

As previously mentioned, attitude-consistent information is preferable to counter-attitudinal information, strong political predisposition thus tends to engage in intentional exposure to like-minded media for cognitive consistency (Garrett 2009; Stroud 2008; Garret, Carnahan, and Lynch 2013). But intentional exposure may not occur as often as assumed because not everyone holds pre-existing political views, most people simply gather news from major news outlets with good reputations and credibility, regardless of their political leanings, or are incidentally exposed to information that does not conform to their pre-existing beliefs (Holbert, Hmielowski, and Weeks 2012; Lee, So, and Leung 2015). For example, one study finds that consumption of the conservative Fox News network is positively associated with the use of a liberal news source—MSNBC (Holbert, Hmielowski, and Weeks 2012). In other words, predisposition may not necessary lead to intentional selection on media consumption but it moderates the relationship between media exposure and political attitude. Accordingly, exposure to pro-establishment media tend to maintain mainland China students' existing beliefs and exposure to pro-democracy media do not necessarily change their preference on democracy (Nyhan and Reifler 2010). While no theory predicts the influence from exposure to neutral media, an emphasis on facts rather than emotional appeals may open one's mind to accept ideology differences.



The case of Macau students are likely to be different, we expect that they are more susceptible to media which with a clear political ideology position as they are originally politically moderate.

*H2a: Exposure to pro-establishment media decreases support for the Umbrella Movement in all types of student.*

*H2b: Exposure to pro-democracy media increases Macau students' support for the Umbrella Movement; the influence is neutral on Chinese students.*

*H2c: Exposure to neutral media exerts no effect on Macau students, but increases Chinese students' attitudes toward the Umbrella movement.*

In addition to intentional seeking of information, students may also encounter information accidentally on social media (Colleoni, Rozza, and Arvidsson 2014). The content accidentally encountered on social media is mainly determined by who their friends are and what information they share on social media (Bode 2016; Tang and Lee 2013; Wohn and Bowe 2016; Zhao 2016; Wells and Thorson 2017). Many of us choose to connect with friends, colleagues, classmates, and family members on social media for nonpolitical reasons such as common interests or hobbies even there are many friendships that cut-across ideological affiliations. As a result, social media increases the level of information exposure which expose users to information they are not familiar with, some of which even contradicts their deeply held views (Tang and Lee 2013). Exposure to cross-cutting perspectives is essential for people to understand opposing views, and this would lead people to become more politically tolerant when exposed to diverse and cross-cutting perspectives moderate their beliefs when presented with overwhelming evidence to the contrary (Wang, Guo, and Shen 2011). Individuals can disagree with a friend posts, but

few people unfollow friends simply because ideology differences (Bode 2016). Even though exposure to opposing views can cause cognitive dissonance, many people still feel compelled to keep those friends for social reasons, thus continuing their exposure to cross-cutting views. It is also worth noting that incidental exposure has the potential to reach the politically uninterested, who are less likely to seek out political information on their own, thus helps in closing the knowledge gap between the politically interested and uninterested (Wells and Thorson 2017). Those who are not interested in politics can become knowledgeable about politics if they are connected to someone who are highly interested in public affairs (Valeriani and Vaccari 2016; Tang and Lee 2013). Whether incidental exposure to political information significantly increases political learning among students? Some scholars argue that passive learning is more effective than activating learning in forming public opinion because it meets the conditions for effective learning. Firstly, the ability of a post to provide new and unfamiliar information increases learning given that human beings have a tendency to ignore familiar information, but have enormous capacities for absorbing and internalizing innovative information (Bode 2016). Secondly, passive learning usually takes place in a relaxing environment where political information mixed with celebrity gossips, entertainment news, or personal updates. People put up more barriers to absorbing information when engaging in purposive and active media consumption but are less guarded and more accepting of political information received from nonpolitical sources incidentally, and learning becomes more effective in the absence of resistance to what is exposed (Bode 2016). Thirdly, As information received from Facebook news feed and WeChat is mostly generated by well-known others offline such as colleagues, classmates, friends, family members, it is deemed to be more credible and

trustworthy, and is more likely to be taken seriously, thus exerts a greater impact on attitude formation (Bode 2016; Tang and Lee 2013).

Following the same logic in intentional exposure that predisposition serves as moderator between media exposure and political attitude, if incidental exposure matters, students should have equally chance in increasing as well as decreasing their support on the Umbrella Movement.<sup>3</sup> We expect that receiving political information from Facebook news feed has influence on students' political attitude but it is difficult to predict which directions it will take. The circumstances should be theoretically similar in WeChat. However, censorship would lead students under the domination of pro-establishment political information. We then generate the following hypotheses:

*H3a: Incidental exposure to political news via Facebook news feed have an influence on the support for the Umbrella Movement in all types of student.*

*H3b: Incidental exposure to political news via WeChat decreases the support for the Umbrella Movement in all types of student.*

## **Methodology**

Before the data collection began, we first interviewed 10 college students (5 Macau students and 5 Chinese students) and collected information on their media usage patterns and their attitudes toward the Umbrella Movement. The information gathered from in-depth interview is used to design our survey questionnaire.

---

<sup>3</sup> According to the assumptions from H2a to H2c, there are 6 possible outcomes between media exposure and political attitude when predisposition serves as moderator. Within all the possible outcomes, 2 outcomes are expected to be neutral, 2 outcomes will be positive, while 2 outcomes are negative.

### ***Sample.***

We collected a representative sample of second and third year college students studying in Macau in April of 2016. Specifically, we collected our data from a compulsory general education course taken by all second and third year college students in one of the largest public universities in Macau. First year students were excluded from the study to ensure that mainland Chinese students have exposed enough time in Macau's media environment. Informed consent from the students was solicited before questionnaire administration, and respondents were assured of confidentiality and anonymity before answering the questionnaire during the class time with the presence of two trained research assistants. Almost all selected students have agreed to participate. The total sample size consisted of 825 senior college students studying in Macau, of which 60% are female students and 22.5% are mainland Chinese students.<sup>4</sup>

### ***Measurement***

The dependent variable is a 10-point scale that measuring students' attitudes toward the Umbrella Movement by the following question: "What is your opinion on the Occupy Central happened at Hong Kong?". 1 refers to "totally disagree" and 10 refers to "totally agree".

The key independent variables are intentional and incidental exposure to political information. To measure intentional exposure, students are asked how often they read Facebook homepages from media that are listed on Table 1. If the answer is "never" or "seldom", it is coded as 0. The coding would be 1 if the answer is "sometimes" or "often".

---

<sup>4</sup> Mainland China students are defined as students who are born in China and hold a China ID card.

Incidental exposure is measured by the average score on the sum of the frequency with which students respectively receive political information on Macau, Hong Kong and Chinese politics incidentally on Facebook news feed and WeChat in a 4-point scale. The scale refers “never” to “often” that ranges from 1 to 4.

We also use gender, father’s level of education, students’ academic performance, major, nationalism as well as family members and friends’ attitudes toward the Umbrella Movement as control variables.

## **Findings**

### ***Students’ attitudes toward the umbrella movement and their media usage patterns***

Table 2 suggests that in general Macau students show more support on the Umbrella Movement. The magnitude, however, is quite moderate that not even exceed 5 in the 10-point scale. This seems to correspond to the existing literatures that the concept of democracy for Macau people is similar to that of their Chinese counterparts as a kind of guardianship discourse rather than liberalism even Macau enjoys significant more political freedom than China (Lu and Shi 2015; Yee 2001).

Regarding intentional exposure to political information, Macau students is disproportionately in favor of pro-democracy media like Apple Daily (76.9%), 100most (65.1%) or Western media (45.9%); mainland China students, on the other hand, do not show much interests on most of the newspapers from Hong Kong and Macau no matter which political position they hold as the frequency in reading daily is commonly below 20%. However, it is interesting to find that even mainland China students read more Chinese newspapers (32.5% vs 12.8%) than Macau students, foreign media (44.5%) not

pro-establishment media is their first choice followed by the Apple Daily (37%). In other words, although H1a only receive partial support, self-selection bias in intentional exposure is less likely a problem as the magnitude in media exposure in the sense of political spectrum is quite similar within the two groups even the frequency distribution in media consumption is different. In the case of incidental exposure, as H1b expected, Macau students on average prefer Facebook news feed (2.8 vs 2.3) than WeChat (2.2 vs 2.4) in compare with their mainland China classmates.

[Table 2 is inserted here]

### ***The Effect of Media Exposure on Students' Attitudes toward the Umbrella Movement***

According to Table 3, intentional exposure to pro-establishment media is negatively correlated with the support on the Umbrella Movement, but we do not find influence on neither types of student at the 0.05 significant level. H2a thus is rejected. In contrast, exposure to pro-democracy media would significantly increase Macau students' support on the Umbrella Movement. The same effect do not observe in mainland China students. H2b is fully supported by the model outcome. Finally, as expected by H2c, neutral media have no effect on political moderate Macau students; but it have a significant positive influence ( $p < 0.01$ ) on mainland China students. The correlation is as high as 0.86 that makes it the strongest predictor among all the variables that we control in the model.

Regarding to the influences from incidental exposure, receiving political information on Facebook news feed is positively correlated with students' consent on the Umbrella Movement; but only for Macau students it is statistically significant. H3a thus receives partial support. The modal outcomes nevertheless suggest that exposure to

diversified opinions is beneficial to political tolerance. The model outcomes are more interested in the case of WeChat. Although H3b is rejected as we do not find any significant results, the different correlation directions between the two student groups deserve a further explanation. One possible answer is that students are used different WeChat version. It was reported that WeChat applies different strategies in censorship in its domestic and international version. We cited two examples from a recent report conducted by the Citizen Lab from the University of Toronto.<sup>5</sup> In the first example, a China account updated an image related to the “709 Crackdown” on WeChat Moments;<sup>6</sup> the image was hidden from other China account but it is visible in international account. In another example, a China account intends to send an image related to the same incident to an international account, but the image itself was disappeared. The circumstance is the same when an international account sends an image of a cartoon of an empty chair symbolizing Nobel Laureate Liu Xiaobo to a China account. The above examples all suggest that the intensity of censorship in WeChat China account is stronger than in China account than in international account. Because Macau is considered as oversea area in China, if Macau students use a Macau cellphone number to register WeChat, they are less likely influenced by censorship and makes the information flow more similar with Facebook; this may be the reason why the correlation is positive in their cases but it is negative in mainland China students.

## **Conclusions and Discussion**

---

<sup>5</sup> Jeffrey Knockel, Lotus Ruan, Masashi Crete-Nishihata and Ron Deibert. 2018. “(Cant’t) Picture This: An Analysis of Image Filtering on WeChat Moments”, The Citizen Lab, Aug 14, <https://citizenlab.ca/2018/08/cant-picture-this-an-analysis-of-image-filtering-on-wechat-moments/>.

<sup>6</sup> For the background of the “709 Crackdown”, see *HKFP*, “China Lawyer Crackdown”, accessed June 25, 2019, <https://www.hongkongfp.com/china-lawyer-crackdown/>.

Our findings in this article have several implications on studies of Macau Politics and political communication in general.

First, even the Umbrella Movement has profound political consequences in Hong Kong,<sup>7</sup> it only receives moderate support from Macau students. What makes Macau and Hong Kong a very different political culture is clearly beyond the scope of this article; our findings nevertheless agree that future political development on the two cities are likely divergent rather than convergent because without a common political agenda (like pursuing democratization) to challenge the status quo (Jeong 2017); and explains why Macau seems more stable than Hong Kong even they are both hybrid regime and under the “one country, two system” .<sup>8</sup>

Second, existing literatures have already conducted various explorations on the media usage pattern in Macau. But little effort is made to include mainland China students. Our dataset demonstrates that mainland China students are less interested in Hong Kong and Macau media and remain accustomed with channels like WeChat. According to what we heard in interview, there are various the reasons behind such as no interest in local affairs and feel not comfortable in reading news written in traditional Chinese. On the other hand, mainland China students share the same preference as the Macau students on some pro-democracy media such as the Apply Daily and Foreign media. What we find is not a no clear-cut but a more complicated picture – a more freedom media environment provides more choices in media consumption but does not completely change one’s habit.

---

<sup>7</sup> One political consequence from the Umbrella Movement is the raise of the so-called Localism. As a newly born political force, unlike the traditional pan-democracy camps which pursue democratization through negotiation with Beijing, Localism inclines to a more radical agenda in Hong Kong’s political development that ranges from referendum to violent revolution.

<sup>8</sup> Hybrid regime is a subtype of authoritarian regime which simultaneously has the features of democracy and autocracy. In the case of Macau and Hong Kong, direct election is applied in legislature but ordinary citizens are excluded from the Chief Executive Election. For more discussion, see (Diamond 2002).



Third, regarding how media shapes public opinion, exposure to the same type of media exerts differential effects on Macau and Chinese students' attitudes toward the Umbrella Movement. Mainland Chinese students only increase their support toward the Umbrella Movement under intentional exposure to neutral media. Our interpretation to the result is that fair and balanced reporting seems to speak louder than emotional appeal, especially to students who hold strong political predispositions. From the same vein, for relative political moderate Macau students, changes in political attitude can be caused by either intentional exposure or incidental exposure to pro-democracy media. In summary, the relationship between media exposure and political attitudes is moderated by students' political predispositions. Media that takes a clear stance (pro-democracy) exerts a greater impact in shaping political attitude among students who don't hold strong pre-existing political beliefs, while media that does not take a stance (neutral media), plays an important role in shaping political attitudes among students who hold strong political predispositions. An empirical contribution from the above findings is that incidental exposure to political information, a form of passive learning, is not necessarily more effective than active learning in shaping public opinion as predicted by the theory of passive learning.

#### Reference

- Bode, Leticia. 2016. "Political News in the News Feed: Learning Politics from Social Media." *Mass Communication and Society* 19 (1):24-48.
- Chan, Joseph M., and Francis Lap Fung, Lee. 2007. "Media and Politics in Post-handover Hong Kong: An Introduction." *Asian Journal of Communication* 17 (2):127-33.

- Chan, Michael. 2017. "Media Use and the Social Identity Model of Collective Action: Examining the Roles of Online Alternative News and Social Media News." *Journalism & Mass Communication Quarterly* 94 (3):663-81.
- Colleoni, Elanor, Alessandro Rozza, and Adam Arvidsson. 2014. "Echo Chamber or Public Sphere? Predicting Political Orientation and Measuring Political Homophily in Twitter Using Big Data." *Journal of Communication* 64 (2):317-32.
- Diamond, Larry Jay. 2002. "Thinking about Hybrid Regimes." *Journal of Democracy* 13 (2):21-35.
- Garret, R. Kelly, Dustin Carnahan, and Emily K. Lynch. 2013. "A Turn toward Avoidance? Selective Exposure to Online Political Information, 2004-2008." *Political Behavior* 35 (1):113-34.
- Garrett, R. Kelly. 2009. "Echo Chambers Online?: Politically Motivated Selective Exposure among Internet News Users." *Journal of Computer-Mediated Communication* 14 (2):265-85.
- Guo, Steve. 2011. "Framing Distance: Local vs. Non-Local News in Hong Kong Press." *Chinese Journal of Communication* 4 (1):21-39.
- Han, Donglin, and Dingding Chen. 2016. "Who Supports Democracy? Evidence from a Survey of Chinese Students and Scholars in the United States." *Democratization* 23 (4):747-69.
- Holbert, R. Lance, Jay D. Hmielowski, and Brian E. Weeks. 2012. "Clarifying Relationships Between Ideology and Ideologically Oriented Cable TV News Use: A Case of Suppression." *Communication Research* 39 (2):194-216.
- Huang, Haifeng. 2015. "Propaganda as Signaling." *Comparative Politics* 47 (4):419-37.
- Huang, He, Fangfei Wang, and Li Shao. 2018. "How Propaganda Moderates the Influence of Opinion Leaders." *International Journal of Communication* 12:2599-621.
- Hyun, Ki Deuk, and Jinhee Kim. 2015. "The Role of New Media in Sustaining the Status Quo: Online Political Expression, Nationalism and System Support in China." *Information, Communication & Society* 18 (7):766-81.

- Ieong, Meng U. 2017. "Macao and Hong Kong--Convergence or Divergence? The 2014 Anti-Retirement Package Bill Protest and Macao's Governance Crisis." *Asian Survey* 57 (3):504-27.
- Ieong, Meng U. 2019. "Attitudes towards the Umbrella Movement in Macao: Findings and Implications from a Survey of University Students." *China: An International Journal* 17 (2):181-95.
- King, Gary, Jennifer Pan, and Margaret E. Roberts. 2013. "How Censorship in China Allows Government Criticism but Silences Collective Expression." *American Political Science Review* 107 (2):1-18.
- Kwong, Ying-Ho. 2015. "The Dynamics of Mainstream and Internet Alternative Media in Hong Kong: A Case Study of the Umbrella Movement." *International Journal of China Studies* 6 (3):273-95.
- Lam, Wai-Man. 2010. "Promoting Hybridity: The Politics of the New Macau Identity." *The China Quarterly* 203:656-74.
- Larose, Robert. 2010. "The Problem of Media Habits." *Communication Theory* 20 (2):194-222.
- Lee, Francis Lap Fung. 2007. "Hong Kong Citizens' Beliefs in Media Neutrality and Perceptions of Press Freedom: Objectivity as Self-Censorship?" *Asian Survey* 47 (3):434-54.
- Lee, Francis Lap Fung., and Joseph Chan. 2009. "Organizational Production of Self-Censorship in the Hong Kong Media." *The International Journal of Press/Politics* 14 (1):112-33.
- Lee, Francis Lap Fung., and Angel Mei Yi, Lin. 2006. "Newspaper Editorial Discourse and the Politics of Self-Censorship in Hong Kong." *Discourse & Society* 17 (3):331-58.
- Lee, Paul Siu Nam., Clement York Kee, So., and Louis Leung. 2015. "Social Media and Umbrella Movement: Insurgent Public Sphere in Formation." *Chinese Journal of Communication* 8 (4):356-75.
- Lo, Sonny Shiu-Hing. 2007. "One Formula, Two Experiences: political divergence of Hong Kong and Macao since retrocession." *Journal of Contemporary China* 16 (52):359-87.

- Lorentzen, Peter. 2013. "China's Strategic Censorship." *American Journal of Political Science* 58 (2):402-14.
- Lu, Jie, John Aldrich, and Tianjian Shi. 2014. "Revisiting Media Effects in Authoritarian Societies: Democratic Conceptions, Collectivistic Norms, and Media Access in Urban China." *Politics & Society* 42 (2):253-83.
- Lu, Jie, and Tianjian Shi. 2015. "The Battle of Ideas and Discourses before Democratic Transition: Different Democratic Conceptions in Authoritarian China." *International Political Science Review* 36 (1):20-41.
- Nyhan, Brendan, and Jason Reifler. 2010. "When Corrections Fail: The Persistence of Political Misperceptions." *Political Behavior* 2010 (32):303-30.
- Stroud, Natalie Jomini. 2008. "Media Use and Political Predispositions: Revisiting the Concept of Selective Exposure." *Political Behavior* 30 (3):341-66.
- Su, Chang. 2017. "The Roles of Online Alternative Media in Facilitating Civil Society Development in Macau: The Case Study of Macau Concealers and All About Macau Media" In *Digital Technology and Journalism: An International Comparative Perspective*, edited by Jingrong Tong and Shih-Hung Lo, 237-59. Palgrave Macmillan.
- Tang, Gary, and Francis Lap Fung, Lee. 2013. "The Impact of Exposure to Shared Political Information, Connections With Public Political Actors, and Network Structural Heterogeneity." *Social Science Computer Review* 31 (6):763-73.
- Valeriani, Augusto, and Cristian Vaccari. 2016. "Accidental exposure to politics on social media as online participation equalizer in Germany, Italy, and the United Kingdom." *New Media & Society* 18 (9):1857-74.
- Wang, Ning, Zhongshi Guo, and Fei Shen. 2011. "Message, Perception, and the Beijing Olympics: Impact of Differential Media Exposure on Perceived Opinion Diversity" *Communication Research* 38 (3):422-45.

- Wang, Zheng. 2012. *Never forget national humiliation: Historical memory in Chinese politics and foreign relations*. New York, NY: Columbia University Press.
- Wells, Chris, and Kjerstin Thorson. 2017. "Combining Big Data and Survey Techniques to Model Effects of Political Content Flows in Facebook." *Social Science Computer Review* 35 (1):33-52.
- Wohn, Donghee Yvette, and Brian J Bowe. 2016. "Micro Agenda Setters: The Effect of Social Media on Young Adults' Exposure to and Attitude Toward News." *Social Media + Society* 2 (1):1-12.
- Yee, Herbert S. 1996. "The Political Subcultures of University Students in Hong Kong, Macau, and Taiwan." *Issues & Studies* 32 (3):55-77.
- Yee, Herbert S. 2001. *Macau in Transition: From Colony to Autonomous Region*. New York: Palgrave.
- Yin, Degang. 2009. "Aomen dazhong chuanmei xianzhuang yu fazhan fanglue [An Overview on Mass Media in Macao]." In *Aomen renwen shehui kexue yanjiu wenxuan-zonghejuan [Selection of Humanity and Social Science Studies in Macao·Synthetic]*, edited by Zhiliang Wu and Zhenyu Chen, 331-42. Beijing: Social Science Press.
- Zhao, Xinyan. 2016. "Effects of Perceived Media Diversity and Media Reliance on Public Opinion Expression." *International Journal of Public Opinion Research* 28 (3):355-75.

Table 1. Media Political Spectrum in Macau

<b>Political Position</b>	<b>Media</b>
Pro-establishment	Macau Daily; Ta Kung Pao; Sing Tao Daily; Oriental Daily; The Sun; Exmoo News; other Chinese newspapers
Neutral	Ming Pao; Hong Kong Economic Journal; Initium Media
Pro-democracy	Apple Daily; All about Macau; Stand News; 100 Most; Foreign Media

Source: the author

Table 2. Descriptive Statistics on Attitudes toward the Umbrella Movement and Media Usage Patterns

	<b>Macau students</b>	<b>Mainland Chinese students</b>
<b>Attitudes toward the Umbrella Movement</b>		
Supporting occupy central	4.7	2.7
<b>Intentional exposure to political information</b>		
<i>Pro-establishment media</i>		
Macau daily/Ta Kung Pao	42.1%	19.6%
Sing Tao Daily	16.6%	7.1%
Oriental Daily /the Sun/Exmoo News	36.3%	15.7%
Other Chinese newspapers	12.8%	32.5%
<i>Neutral media</i>		
Ming Pao	28.4%	18.1%
Initium Media	11.1%	7.8%
Hong Kong economic journal	16.1%	7.4%
<i>Pro-democracy media</i>		
All about Macau	38.7%	9.3%
Stand news	17.2%	7%
Apple Daily /Apply Daily App	76.9%	37%
100most /TVmost	61.5%	11.2%
Foreign media	45.9%	44.5%
<b>Incidental exposure to political information</b>		
Receiving information on Facebook news feed	2.8	2.3
Receiving information on WeChat	2.2	2.4

Source: the author

Table 3. The effect of media exposure on college students' attitudes toward the Umbrella Movement

			<b>Supporting Occupy Central</b>	
			<b>Macau Students</b>	<b>Mainland Chinese students</b>
	intercept		2.08**	2.02
<b>Intentional media exposure to political information</b>				
	Exposure to pro-establishment media		-0.09	-0.09
	Exposure to pro-democracy media		0.18***	-0.3
	Exposure to neutral media		-0.16	0.86**
<b>Incidental media exposure to political information</b>				
	Receiving via Facebook news feed		0.26*	0.19
	Receiving via WeChat		0.02	-0.17
<b>Control variables</b>				
	Female		-0.23	0.1
	Father's level of education		0.01	0.04
	Academic performance		0.07	-0.06
	Majored in science		0.17	-0.23
	Nationalism		-0.84***	-0.42
	Family elder members' support on occupy central		0.19***	0.14
	Family members of same generation' support on occupy central		0.14**	0.05
	Friends supporting occupy central		0.46***	0.40***
	R <sup>2</sup>		0.49	0.36
	N		605	183

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

Source: the author