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Press Systems, Freedom of the Press and Credibility: A Comparative Analysis of Mobile News in Four Asian Cities

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ABSTRACT

As mobile news goes mainstream thanks to the ubiquitous smartphones, this study assesses users' perceptions of the credibility of news created, packaged and delivered to the mobile screen in four Asian cities: Hong Kong, Shanghai, Singapore, and Taipei. Results of surveys of 2988 respondents show that respondents in Shanghai and Singapore perceived mobile news as more credible than did their counterparts in Hong Kong and Taipei. Mobile news use, news reliance, utility and appeal of mobile news were found to be significantly associated with the perceived credibility. Moreover, regression results indicate that the level of press freedom was a significant but negative predictor of perceived credibility of mobile news, after taking into consideration the influences of frequency of using mobile news, reliance on traditional and mobile media as news sources, perceived utility of mobile news, and perceived appeal of mobile news presentation. Implications of the findings are discussed.

KEYWORDS

Smartphones; mobile news; credibility; press freedom; press systems; Asia

Introduction

Mobile news refers to news that is created, delivered and consumed through the ubiquitous mobile phone and other devices (Westlund 2013). The real-time reporting of news that fits in one's pockets takes the forms of texting, e-mail alerts, push notices, mobile web-pages or news apps. Thus, mobile news highlights fast accessing news from a range of Internet-enabled mobile devices, to which users are constantly connected (Wolf and Schnauber 2015). Thanks to rapid technological advances in 3G/4G networks, mobile news has transformed the ways in which millions of people access and read the news in the past decade (Westlund 2013). It has gone mainstream thanks to the ubiquity of smartphones with touch screens and user-friendly interfaces supported by Android or IOS operating systems. Accordingly, audiences are exposed to news more than the past due to readily accessible multiple channels such as mobile push notifications, social news, and news apps. As many as 85% of Americans accessed news via their mobile

devices in 2017 (Pew 2017). At a time of declining news consumption (Barthel 2010), mobile news seems to fill the void, making smartphones and mobile devices the new face of digital news available and accessible to millions of users.

News delivered and created for mobile devices and smartphones originated from texting messages (e.g., SMS, MMS, MIMS) in the early 1990s. It has diversified into interactive forms with appealing presentations (links and downloads) that are compatible with online news (QR codes, mobile version of news websites, and mobile apps) (Wei et al. 2014; Westlund 2013). News delivered to the mobile screens thus enables users to post and share real-time news on mobile devices with others (Wei and Lo 2015). The mobile device is particularly handy for people who want to stay updated with news while on the move.

Also, past research shows the more people use their always-on mobile devices—smartphones, tablets, e-readers and wearables—the more they read or view news (Chan-Olmsted, Rim, and Zerba 2013). Mobile news expands the reach and coverage of digital news beyond news junkies to people who otherwise would avoid reading news. In China where the state places tight control over news media, mobile devices offer a viable and alternative platform to read news largely because of their less regulated status. Research (Wei et al. 2014) has found that mobile news usage was particularly popular in those societies where the press is not free or partially free. Therefore, acquiring mobile news is not simply a matter of convenience and easy access from what Diminick, Feaster, and Hoplamazian (2010) called “a niche medium.” Rather, accessing news from smartphones and mobile devices is tied to the fundamental issues of media access by citizens and the freedom of news organizations to keep citizens informed.

To explore the experience of mobile news users with this relatively new form of news in countries where levels of government control of news outlets differ and the degree of press freedom varies markedly, this study seeks to examine users’ perceptions of credibility of news delivered to the smartphone screen in four Asian cities: Hong Kong, Shanghai, Singapore and Taipei. The four cities differ in level of press freedom and lead Asia in smartphone ownership (see Table 1), which means increased use of mobile phones as a source of news thanks to always-on connectivity. In fact, accessing news 24/7 from the mobile phone is popular among young people (about 70% in Taiwan, second only to TV; 68% on smartphones in Hong Kong, see Chan 2015). However, the extent to which

Table 1. Political systems, press freedom and mobile penetration rates in the four Asian cities.

	Singapore	Hong Kong	Taipei	Shanghai
Government type/political system	Parliamentary democracy	Executive limited democracy	Semi-presidential republic	Communist party-led state
Political rights & civil liberties ^a	Partly free	Partly free	Free	Not free
Categories of press freedom ^a	Not free	Partly free	Free	Not free
Press freedom ranking in the world ^a	151	70	42	176
Internet penetration rate	84%	93%	87%	74.10%*
Mobile penetration rate	150.8%	248.2%	124.14%	78%*
Smartphone penetration rate ^b	88.9%	88.3%	92.5%	63.6%*

Sources: ^aFreedom House 2017; ^be-marketers 2015; *Represents data for China as a country.

they engaged with mobile news was influenced by the media system in their society, especially the presence or absence of a free and independent press (Wei et al. 2014).

Press Freedom in Hong Kong, Singapore, Shanghai and Taiwan

The media systems operating in Shanghai, Hong Kong, Singapore, and Taipei are markedly different. As a Special Administrative Region of China, Hong Kong enjoys autonomy under the scheme of “one country, two systems.” The former British colony retains a pluralistic media system, including private and public broadcasters, commercial press and government-run newspapers published by the mainland. However, the system of uncensored media operating on open market is changing, especially in the wake of social protest movements such as the Umbrella movement in 2014. As noted by Frisch, Belair Gagnon, and Colin (2017), the influence of mainland Chinese interests is growing in Hong Kong’s media. Newspapers of mass circulation and television are found to be “increasingly deferential to the Beijing government’s news agenda” (1165).

Singapore represents a parliamentary democracy. The ruling party, which has dominated the country’s politics for decades, promotes Confucian tradition of respect for authority and family, and emphasizes community and nation over individual freedoms and civil rights (Dalton and Ong 2003). The mission of media in Singapore, traditional and new, is to support nation-building rather than serve as a watchdog on the government (Skoric and Poor 2013). Research (Tandoc and Duffy 2016) has indicated that news consumers in Singapore expect journalists to be both supportive and critical of the government.

Under the Communist Party’s rule, China’s media system mixes party organs with media outlets appealing to the mass market (Zhao 1998). As state-run TV or press, their goals are to propagate official lines and government policies. A range of new media, such as the weblogging site Weibo and social media app WeChat, have grown significantly in China; they are less regulated than the official media. Among the four Asian cities, Taipei is the capital city of one of Asia’s most vibrant democracies. After breaking with its authoritarian rule and tight control of the media under martial law in 1988, Taipei has become known for its robust media system with a full spectrum of ideological stances from the pro-ruling Democratic Progressive Party-led coalition to the pro-KMT party.

Accordingly, the level of press freedom in the four cities differs substantially, ranging from free, partly free, and not free. Freedom of the press refers to the degree to which media are able to create and disseminate their desired content in a society or the extent to which journalists are immune from fear and oppression by authorities in serving the public’s interest with fair and accurate reporting. Dimensions of press freedom thus include pluralism in structure, independence from the government, legislative protection, and transparency in journalistic practice (An and Kwak 2017). According to Freedom House (2017), Taiwan ranked 42nd among a total of 180 countries or territories around the world, making its press one of the freest in Asia; the rankings of Hong Kong, Singapore, and Shanghai were respectively the 70th, the 151st, and the 176th (see Table 1).

Against this large and multifarious socio-political backdrop, use of mobile news heightens the conflict between what De Sola Pool (1983, 5) called “technology of freedom” (i.e., enhanced freedom in distributing public information enabled by communication technologies that are *dispersed, decentralized, easily accessible and at a low cost*) and state control of media in hierarchical societies with an authoritarian tradition. With a focus on

comparing perceptions of credibility of mobile news across the four Asian cities, findings of this large-scale study will shed light on the promise and peril of digital news delivered to mobile screens.

Literature Review and Research Questions

The literature (Flanagin and Metzger 2007; Gunther 1992) has examined credibility as “a perceptual variable rather than as an objective measure of the quality of some information or source of information” (Flanagin and Metzger 2007, 321). Following this approach, credibility of mobile news is explored in the present study as a property that is judged by the users of such news, who formed the perception through their experience of using mobile news on various devices.

Media Credibility in Asia

Credibility of the media has been an important topic in Asian communication research. Audiences in China were found to place a high level of trust in Chinese news media; media credibility ratings in China were found to be much higher than those in the U.S. (Liu and Bates 2009). A survey of 5807 residents in ten Chinese cities indicated that official media outlets such as *The People's Daily* were perceived to be highly credible (Zhang, Zhou, and Shen 2014). The same study also found that television, which is owned and run by the government, was perceived to be the most credible news source, followed by newspapers, websites, radio, magazines, and mobile devices. Although social media used on mobile phones are used widely, they were rated the least credible (Li and Zhang 2018).

In comparison, media credibility in Hong Kong has suffered a decline in the last decade (Hong Kong University 2018; So 2016). For instance, a survey of 1023 residents in 2017 indicated that media credibility for all news media had fallen to a 10-year low from 6.19 to 5.73 out of a 10-point scale (Hong Kong University 2018). Another survey of 907 people in 2016 (So 2016) reported similar trends. The overall ratings for all newspapers in 2016 were 5.58, a decrease from 6.40 in the previous survey conducted in 2009. Over the same period of time, the overall rating for electronic media in 2016 was 6.36, down from 6.86.

In Taiwan, the news media enjoy a great deal of freedom. However, Taiwanese people have a declining confidence in them as sources of news due to the rise of a partisan press that has polarized the public. According to the Taiwan Social Change Surveys (Lo 2013), the credibility of newspapers and television declined significantly from 1998 to 2003. In 1998, the credibility rating of newspapers was 6.90 out of 10. It fell to 6.36 in 2003. The credibility rating of television news in 2003 was 7.09, a drop from 7.64 in the 1998 survey. Other studies (e.g., Hsu 2015) found consistently that the people in Taiwan had a low level of trust in the news media across the board. Hsu (2015) compared Taiwan's news media credibility between 2008 and 2012. The results showed that television and newspaper's credibility had declined from 2008 to 2012 (2008: TV = 2.63, Newspaper = 2.50; 2012: TV = 2.52, Newspaper = 2.42, on a 5-point Likert scale). Credibility of the Internet (2012 only: Internet = 2.46) was much lower than that of television and newspaper.

Singapore's news media are often the target of western criticisms; its ranking in press freedom indices declines from year to year. Nevertheless, surveys conducted among

Singaporeans have shown a consistently high level of trust in the national news media. While Singaporeans recognize the strong influence of the government on the national media, especially when it comes to reporting about politics (Hao 1996), they still regard their nation's news organizations as trustworthy (Tandoc 2018). A survey found that 47% of respondents in Singapore trust the news media overall (Tandoc 2018). They ranked local news outlets, such as the cable news network—*Channel News Asia*—and the English newspaper *Straits Times* as the most trusted media organizations. The same survey found that only 20% said they trust the news from social media, even though social media (63%) have outranked print (43%) and television (55%) as the main sources of news for Singaporeans.

Thus, perceptions of media credibility vary a great deal by country. In countries where the level of press freedom is low, and the media are closely affiliated with the government or under its influence, credibility tends to be high across the media outlets. On the other hand, media are considered less credible by audiences in societies where press freedom is protected, and pluralist media outlets across the ideological spectrum co-exist. More importantly, the above review of media credibility in Asia reveals a void in comparative analyses of the credibility of mobile media as an emerging news source across different Asian societies. Because of the lack of empirical research, a research question was raised:

RQ1: Are there any differences in the perceived credibility of mobile news among respondents in the four Asian cities? If so, how?

Media Use and Media Reliance as Predictors

The extensive literature of media credibility (Gaziano and McGrath 1986; Gunther 1992) suggest that perceptions of media credibility are subject to the influence of key demographic differences of audiences such as gender, education, and religiosity (Golan 2010). Johnson and Kaye (2004) argued that as the Internet and digital media diffused further into all age groups in society, demographics would exert less influence on the perceptions of media credibility. On the other hand, the formation of credibility perceptions is attributed to users' experience of using the given media for news-seeking (Gunther 1992), which includes the amount of media use, reliance on media to stay informed about current events, and perceived quality and presentation appeal of news on various media outlets.

First, regarding the relationship between media use and credibility ratings for media of choice for news-seeking, evidence from the literature (Johnson and Kaye 2016) shows consistently that audiences who use a particular medium as source of news tend to judge that chosen medium as credible. In fact, the more people use a given media, the higher their perceptions of its credibility. This insight makes sense because people will not commit their time to using a medium for news if they view the medium as not believable.

Recent studies indicate that news media use was positively associated with media credibility. Tsifti and Ariely (2013) found that both newspaper exposure and television/radio exposure were significantly and positively related to trust in media. Similarly, studies of Internet credibility suggest that how credible people judge the Internet to be as an emerging source of information depends on how often they use it. As Flanagin and Metzger (2000) showed, the positive relationship held in use of new media and credibility of the Internet—the more users had experience with using the Internet, the more

they perceived the network of networks as a credible source of information. Greer (2003) discovered that the amount of time spent online was the strongest predictor of whether an online medium would be judged as credible. Informed by past research on media credibility, we expect that a higher level of mobile news usage will be associated with higher perceptions of the credibility of mobile news.

Furthermore, evidence documented in prior research (Golan and Day 2010; Johnson and Kaye 2004) shows that the extent to which audiences rely on a chosen medium as their source of news affects their judgment of the credibility of the medium. As Johnson and Kaye (2000) argued, if audiences perceive a medium such as the Internet to be highly credible as a news medium, they will become highly dependent on that medium for news-seeking. The emerging pattern suggests that the greater the media reliance, the higher the perceived credibility. The underlying argument (Greer 2003; Johnson and Kaye 2000) is that the more people use the media, the more familiar they are with it. Familiarity tends to produce positive evaluations such as believability and trustworthiness. When asked to compare Western TV broadcasters with Al Jazeera, Johnson and Fahmy (2009) found that Al Jazeera viewers gave the Arabic media network the highest rating in credibility.

Golan and Day (2010) tested the effect of media reliance as a predictor of media credibility among audiences in Pakistan. They reported that reliance on a range of media such as TV, newspapers, and the Internet for acquiring news was positively associated with credibility perceptions of these media. Several studies about Internet credibility (Flanagin and Metzger 2000) also revealed that reliance on the Internet for information affected perceptions of Internet credibility. Using survey data of professional journalists in the United States, Cassidy (2007) found that that Internet reliance was a strong and positive predictor of credibility on the Internet as a source of information for news-gathering and reporting among the surveyed journalists.

As media reliance refers to how often audiences habitually select and use a given medium as a source of news (Wanta and Hu 1994), reliance on news implies a psychological disposition to stay informed about current events by routinely using news media, traditional or new. Johnson and Kaye (2004) reported reliance on both online and traditional media as the strongest predictors of the credibility of online news sources. It seems that individuals who rely on traditional media tend to rate new media as credible because traditional news media have digital and online versions.

Considering that mobile versions of digital news are one of the popular forms of news delivered to mobile devices (Wei et al. 2014; Westlund 2013), it is reasonable to speculate that reliance on traditional media for news-seeking will be positively related to credibility perceptions of mobile media as a source to acquire news. In addition, as the focus of the study is on mobile news use, it is logical to anticipate that reliance on mobile media for news-seeking will also be positively related to the credibility of mobile news.

Perceived Utility and Appeal of News Presentation as Predictors

Moreover, this study also examines how credibility of mobile news is associated with perceived utility and appeal of news presented on mobile devices. Past research (Chen et al. 2017) explored effects of perceived usefulness and value of news disseminated in the media on judgment of media credibility. The utility of news as a means to stay informed

and entertain themselves was found to motivate audiences to seek news from mobile media (Chen et al. 2014). Conversely, if audiences judged that the news presented in the chosen media lacked value, they would think poorly of it (Chen et al. 2017). It is thus important to examine the effects of perceived utility of mobile news on users' perceptions of credibility. Because news delivered to the screens of mobile devices offers a niche opportunity (Diminick, Feaster, and Hoplamazian 2010) as well as "a buffer space" (Wei et al. 2014, 650) to stay informed on the move at the users' own schedules; it is plausible that the perceived usefulness of mobile news for filling the gap in between fixed locations to access news will influence audiences' perceptions of mobile news credibility.

In addition, prior experimental research (Chen et al. 2017; Roberts 2010) demonstrates that the quality of a message also affects the readers' perceptions of a reporter, especially in news stories that readers would expect to be objective. Others (Jahng and Littau 2016; Shim et al. 2015; Slater and Rouner 1996) reported similar findings: evaluations of message quality in terms of timeliness was positively associated with credibility perceptions. Exposure to low-quality news videos on a newspaper website was related to the user's perception that the site was less credible (Chen et al. 2017).

Other research (Flanagin and Metzger 2007) focused on assessing effects of the attributes of news presentation online (e.g., design, layout, content, and complexity) on credibility perceptions. Results of experiments (Chen et al. 2017; Jahng and Littau 2016) showed that participants rated highly interactive journalists to be more credible than those who were less interactive in social media. Interactivity as a social cue or attribute of tweeters leads to higher credibility. Additionally, it is worth noting that message presentation that is appropriately organized and well-styled (e.g., consistency of tone, uniqueness of voice, presence of well-mannered attitude) tends to evoke a favorable evaluation.

Because mobile news has the attributes of personalization and interactiveness (Wei et al. 2014), it is reasonable to propose that those unique attributes of mobile news and its presentation features such as a no-clutter, multi-media format, and fast-paced delivery may be positively related to credibility perceptions of news delivered to mobile screens.

Linking Press Freedom to Credibility

Finally, in addition to user-based predictors of perceptions of credibility concerning mobile news, we propose that society-based factors such as press freedom at the macro-level will also predict users' credibility perceptions of mobile news. The expectation is based on past research about the role of societal variables in affecting press performance and audience experience of using mobile media as sources of news after the influences of individual-level user-based predictors were taken into account. It is also informed by the negative relationship between press freedom and news seeking from mobile devices in Asian societies with different political systems (e.g., Wei et al. 2014).

Tsfati and Arieli analyzed data from World Values Survey of 42 countries and found that countries' levels of post-materialistic value orientation were a correlate of media trust in those countries. Analyzing data collected from Japan, Yamamoto, Lee, and Ran (2016) reported that structural pluralism and political heterogeneity were negatively linked with media trust. More recently, Yamamoto and Nah (2018) focused on the influence of contextual factors on media performance; their analysis of a community survey in the United States shows that structural pluralism is negatively related to local newspaper

credibility. That is, the more diverse in terms of race, religion, and political ideologies a community is, the less credibility of local newspapers in the community.

Following the same logic, it is anticipated that mobile phone users' perceptions of mobile news credibility will be affected by the presence or absence of an independent and free press in their society. As Wei et al. (2014) found, mobile news usage was particularly high in societies where the press is not free or partially free. Because a free and independent press will presumably represent pluralistic perspectives and diverse viewpoints of various social groups, people will encounter these structural differences in news reports; when the reports are critical of or expose wrongdoings of the government or big businesses, they may also get exposed to denials or counterargument from government officials or a public relations person of big corporations. Under these circumstances, the audience may be baffled and tend to rate the credibility of news media lower. Conversely, when the press represents the government or ruling party, their reports will be viewed as speaking on behalf of the authorities. This sort of closeness between the government and news media leads to a higher level of credibility perceptions by audiences in those societies (Zhang, Zhou, and Shen 2014).

Previous studies have also found that perceptions of press freedom are associated with audience perceptions of media credibility (Bucy, D'Angelo, and Bauer 2014; Johnson and Fahmy 2008). For example, Bucy, D'Angelo, and Bauer (2014) found that audiences' attitudes toward press freedom can affect their credibility assessments of news organizations. Press freedom is also found to be linked to mobile phone use (Martin 2015). Wei et al. (2014) reported that using mobile phones to read news tends to be higher in communities marked by low levels of press freedom as users tend to use mobile phones as alternative platforms to access information in restrictive conditions. Therefore, it is conceptually important to account for freedom of the press—that press freedom will be negatively related to the credibility of mobile news.

The review of past research led to the next research question, which explores how the above reviewed variables (e.g., mobile news use, reliance on traditional media for news-seeking, reliance on mobile media for news-seeking, perceived utility of mobile news, perceived appeal of news on mobile screens, and level of press freedom) would predict mobile news credibility.

RQ2: To what extent do mobile news use, reliance on traditional media for news-seeking, reliance on mobile media for news-seeking, perceived utility of mobile news, perceived appeal of news presented on mobile screens and level of press freedom predict credibility of mobile news?

Methods

Sampling

Exploring the research questions relied on data collected from large-scale parallel surveys of college students in four Asian cities—Hong Kong, Shanghai, Singapore, and Taipei. College students were chosen as the target population for data collection because young people hold the future of news (Schofield-Clark and Marchi 2017); also, polls show that almost all of them own a smartphone (e.g., 95.5% in Taiwan, see Focus Taiwan, 2018), and reply on wireless devices for Internet connectivity (e.g., 71% in Hong Kong).

A multistage cluster sampling plan was used in drawing the samples across the four cities. In the first step, six universities were selected from the complete lists of existing universities in Shanghai, Taipei and Hong Kong. In Singapore, the two largest and comprehensive universities were selected (the other four universities specializing in particular disciplines such as business, were excluded). In the second step, three general education classes were randomly drawn from the selected universities. The research procedures were reviewed and approved by IRBs. With prior permission of instructors, self-administered questionnaires in Chinese were distributed in the selected classes in China, Hong Kong and Taiwan. The English questionnaires were used in Singapore. Participation was totally voluntary, and participants were assured of confidentiality and privacy. Respondents in the surveys did not receive any monetary incentive or extra credit. The fieldwork of collecting data started in fall 2017 and ended in spring 2018.

The completed questionnaires totaled 2988; they were evenly distributed from the four cities, including 734 respondents (24.6%) from Hong Kong, 754 (25.2%) from Shanghai, 671 (22.5%) from Singapore, and 829 (27.7%) from Taipei. Of the sample, 58.1% were females and 41.9% were males. The average age was 21.05 years ($S.D. = 2.07$, ranging from 17 to 37). Among the 2988 respondents, 17.5% were freshman, 27.3% were sophomores, 23.6% were juniors, 14.9% were seniors and 16.8% were graduate students.

Operationalization

Frequency of Using Mobile News

Mobile news was defined in this study as news that is created and delivered to mobile phones by traditional news organizations or professional journalists, including news forwarded and shared on social media and messaging sites from those traditional sources and news sites. To measure the frequency of using a variety of mobile devices to access news, a six-item scale, which was adopted from previous studies (Wei et al. 2014), was used. Respondents were asked to report how often they used their mobile phones (1) to read news via regular news websites; (2) to read news via mobile websites of news; (3) to read syndicated news like RSS feeds in XML format; (4) to listen to news; (5) to view mobile television news; and (6) to listen to news in Podcast. The responses categories ranged from 1 (never) to 4 (often). The six items were averaged to form an index of “frequency of using mobile news” ($M = 2.43$; $SD = .59$; $\alpha = .78$).

Perceived Utility of Mobile News

Drawing on the domains of information utility identified in previous studies (Li 2013), respondents were asked to indicate their agreement with the following six statements on a five-point Likert scale (“1” meant “strongly disagree” and “5” meant “strongly agree”): (1) Mobile news keeps me well informed when on the road; (2) Mobile news helps me become smarter; (3) Mobile news helps me understand things that happen in society better; (4) Mobile news keeps me connected to the world even when I’m on the move; (5) Mobile news helps me better handle daily routines; and (6) Mobile news allows me to kill some downtime effortlessly. The averages of six items were combined to form a composite measure of “perceived utility of mobile news” ($M = 3.71$; $S.D. = .73$; $\alpha = .88$).

Appeal of Mobile News Presentation

To assess how respondents perceived the appeal of news presented on various mobile devices, five semantic differential scale items on a 5-point scale were used; they were bounded by the following bipolar adjectives: poor layout/neat layout, unappealing/appealing, integrated/highly fragmented, boring/interesting, and tiring to read/refreshing. The items were added and divided by five to create a composite measure of “*appeal of mobile news presentation*” ($M = 3.66$, $S.D. = .74$, $\alpha = .78$).

Reliance on Traditional Media for News-seeking

Johnson and Kaye (2004) defined media reliance as an attitudinal tendency toward media on which audiences depend for gaining information and acquiring news. Using a four-point scale that ranges from “1” (never) to “4” (often), respondents were asked to indicate how often they were dependent on the following media as news sources to stay informed about current affairs: (1) television; (2) newspapers; (3) magazines; and (4) radio. The answers were averaged to build a measure of “*reliance on traditional media for news-seeking*” ($M = 2.21$, $S.D. = .63$, $\alpha = .73$).

Reliance on Mobile Media for News-seeking

To measure reliance on mobile media for news seeking, respondents were further asked to indicate how often they were dependent on mobile news apps as sources to stay informed about current affairs. The response categories ranged from “1” (never) to “4” (often) ($M = 3.05$, $S.D. = .94$).

Credibility of Mobile News

To assess how respondents perceived the credibility of mobile news, a four-item credibility scale was adopted from previous studies (Gaziano and McGrath 1986; Meyer 1988). Respondents were asked to rate the perceived credibility of mobile news on a Likert-type scale ranging from “1” (strongly disagree) to “5” (strongly agree). The five statements were: (1) News acquired from mobile media is reliable; (2) News acquired from mobile media is complete; (3) News acquired from mobile media is balanced; (4) News acquired from mobile media is accurate; and (5) News acquired from mobile media is fair. The five items were averaged to create a composite measure of “*credibility of mobile news*” ($M = 2.83$, $S.D. = .74$, $\alpha = .91$).

Freedom of the Press

It is defined as media independence from legal and political pressures that influence reporting as well as being free from economic factors that affect audience access to news and information in a country (Freedom House 2017). Based on the Freedom of the Press index from the most recent Freedom House Annual Reports (2017), level of freedom enjoyed by the press in each city in the study was ranked on a scale of “1” (the least free) to “4” (the freest). Specifically, level of press freedom was coded as follows: “1” = Shanghai, “2” = Singapore, “3” = Hong Kong, and “4” = Taipei.

Results

RQ1 explored if there were any differences in perceptions of credibility of mobile news among the respondents across the four Asian cities. To address it, a series of one-way

Table 2. Mean estimates of perceived credibility of mobile news in Shanghai, Singapore, Hong Kong and Taipei.

Sample	Total N = 2988	Shanghai N = 875	Singapore N = 671	Hong Kong N = 771	Taipei N = 825	F value
Mobile news is reliable	2.97 (.84)	3.12 (.80)	3.17 (.84)	2.90 (.90)	2.73 (.77)	46.55***
Mobile news is complete	2.84 (.88)	3.06 (.86)	2.83 (.83)	2.89 (.95)	2.60 (.82)	37.56***
Mobile news is balanced	2.72 (.89)	2.88 (.87)	2.86 (.87)	2.69 (.95)	2.47 (.80)	37.01***
Mobile news is accurate	2.84 (.86)	2.96 (.85)	2.99 (.81)	2.87 (.93)	2.57 (.77)	39.87***
Mobile news is fair	2.79 (.85)	2.94 (.83)	2.89 (.84)	2.81 (.93)	2.54 (.75)	35.45***
Combined index: Mobile news credibility	2.83 (.74)	2.99 (.74)	2.94 (.70)	2.83 (.79)	2.58 (.67)	49.89***

Notes: The five-point responses categories ranged from 1 (strongly disagree) to 5 (strongly agree); Figures in the parentheses are standard deviations.

*** $p < .001$; * $p < .05$.

analyses of variance (ANOVA) were performed (see Table 2). The respondents from the four cities differed significantly in credibility of mobile news ($F(3, 2972) = 49.89, p < .001$). Results in Table 2 further show that Shanghai respondents were most likely to perceive mobile news as credible ($M = 2.99, S.D. = .74$), followed by Singaporean respondents ($M = 2.94, S.D. = .70$) and Hong Kong respondents ($M = 2.83, S.D. = .79$). The respondents from Taiwan were the least likely to perceive mobile news as credible ($M = 2.58, S.D. = .67$).

However, results of the post-hoc Scheffe test revealed no significant difference in the perceived credibility of mobile news between Shanghai and Singapore respondents. Thus, results of the Scheffe test suggested that college students in Shanghai and Singapore tended to perceive mobile news as more credible than did their counterparts in Hong Kong and Taipei. Among the four samples, college students in Taipei assigned the lowest mean score to the credibility of news consumed on mobile media.

The next stage of the analysis focused on exploring the second research question concerning the strength of the relationships among frequency of using mobile news, reliance on traditional media for news-seeking, reliance on mobile media for news-seeking, perceived utility of mobile news, appeal of mobile news presentation, freedom of the press and credibility of mobile news. To address it, a hierarchical multiple regression analysis was performed, in which gender and age were entered first into the equation as controls, followed by frequency of consuming news on mobile devices. The third block included reliance on traditional media for news and reliance on mobile media for news. The fourth block entered perceived utility of mobile news and perceived appeal of news presented on mobile devices. The final block entered freedom of the press. The dependent variable was credibility of mobile news.

As Table 3 (model 5) shows, frequency of using mobile news ($\beta = .13, p < .001$), reliance on traditional media for news seeking ($\beta = .19, p < .001$), perceived utility of mobile news ($\beta = .30, p < .001$), perceived appeal of news presented on mobile media ($\beta = .09, p < .001$), and freedom of the press ($\beta = -.20, p < .001$) were all significant predictors of credibility of mobile news. However, reliance on mobile media for news-seeking was negatively related to credibility of mobile news ($\beta = -.07, p < .001$). So was freedom of the press. In fact, it was

Table 3. Hierarchical regression analyses predicting perceptions of the credibility mobile news.

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Block 1: Demographics</i>					
Gender	.08***	.06**	.05**	.07***	.07***
Age	.08***	.07***	.08***	.05**	-.01
<i>Block 2: Mobile phone use</i>					
Frequency of using mobile news		.29***	.24***	.14***	.13***
<i>Block 3: Media reliance</i>					
Reliance on traditional media for news			.14***	.15***	.19***
Reliance on mobile media for news			.00	-.07***	-.07***
<i>Block 4: Perceived utility/appeals of mobile news</i>					
Perceived utility				.30***	.30***
Perceived appeal				.12***	.09***
<i>Block 5: Freedom of the press</i>					
Press freedom ratings					-.20***
Incremental adjusted R ²	1.2%	8.3%	1.6%	11.2%	3.4%
Total adjusted R ²	1.2%	9.5%	11.1%	22.3%	25.7%

Notes: $N = 2988$. Variables coded, or recoded, as follows: gender (0 = female, 1 = male); Frequency of using mobile news, reliance on traditional and mobile media ranged from 1 (never) to 4 (often); Perceived utility and mobile news credibility ranged from 1 (strongly disagree) to 5 (strongly agree); Freedom of the press ranged from 1 (the least free) to 4 (the freest).

*** $p < .001$; ** $p < .01$; * $p < .05$.

the second strongest but negative predictor, adding to the total variance explained in credibility of mobile news (see Table 3).

These results provided empirical evidence in support of the proposed linkages among studied variables (e.g., frequency of using mobile news, reliance on traditional media for news-seeking, reliance on mobile media for news-seeking, perceived utility of mobile news, appeal of mobile news presentation, and freedom of the press) and credibility of mobile news.

Discussion

As smartphone and mobile devices continue to saturate the world with converged functionality with digital media as a news outlet and portable television, news delivered to mobile devices represents a new domain of media credibility research, which is less understood than those for other digital media outlets and platforms. The present study aims to shed light on users' evaluations of the credibility of news delivered to the mobile screen in four Asian cities: Hong Kong, Shanghai, Singapore, and Taipei. To do so, a set of user-based variables as well as society-based macro-level predictor were incorporated in the analytical framework and stated research questions.

Survey results of 2988 respondents across the four Asian cities show that their perceptions of mobile news credibility differed. Respondents in Shanghai and Singapore perceived mobile news as more credible than did their counterparts in Hong Kong and Taipei. Results of regression analyses show credibility of mobile news was associated with frequency of using mobile news, reliance on traditional media and mobile media as news sources, perceived utility of mobile news and appeal of mobile news presentation. Asian college students appear to have taken advantage of the always-on connectivity of smartphone and mobile devices to read or view news; the more often they use their phone for acquiring news, the more they believe mobile news is credible. Familiarity with mobile news seems to have a positive effect on perceived credibility of such news.

Moreover, reliance on traditional media for news-getting and reliance on mobile media for news-seeking, to a lesser extent, are conducive to positive perceptions of mobile news credibility, suggesting that a habit of staying informed using news media, regardless of whether they were traditional or new, generates trust in news read or viewed on mobile screens. In addition, users' experience of consuming mobile news as useful and its presentation as appealing leads to judgment of such news as credible. Consistent with the literature (Flanagin and Metzger 2000; Golan and Day 2010; Johnson and Kaye 2016), these findings add to the research stream of media credibility. The implications are far-reaching: As smartphones become a *technology of comfort* for millions of young users in Asia and the rest of the world, the credibility that the users attach to them as a news source paves the way for mobile devices to grow as a viable and significant medium for news-acquisition.

More importantly, the results underscore the influence of press freedom on assessing how credible mobile news is. The level of press freedom in a society turned out to be a significant but negative predictor of perceived credibility of mobile news after the influences of demographics, frequency of using mobile news, reliance on traditional media for news, reliance on mobile media for news, perceived utility of mobile news, and appeal of mobile news were taken into account. That is, the less freedom the press enjoys in the surveyed society, the higher the credibility of news distributed to various mobile devices. When press freedom is absent or limited, the primary role of the press is to support the government or the ruling party. Under such a press system, political pluralist views tend to be minimal in news reports about home events or world affairs, resulting in audiences assigning high levels of credibility to news media. On the other hand, a free press functions as a marketplace of ideas in which political parties and social activists compete to win public attention. Under this system, as Gaziano and McGrath (1986) pointed out, people may believe the press has too much freedom and the freedoms may be abused. Pluralism and diversity thus tend to be paralleled with low credibility of media (Yamamoto and Nah 2018).

It is understandable that in countries with little or no press freedom, the alternative provided by mobile devices for more informal, unofficial, and less-controlled news would receive higher credibility. There is a disturbing irony, however, in the finding that greater press freedom means lower news credibility, a decline that seems to affect all news media in those countries with a vibrant free press. As noted earlier, this trend may stem in part from a growing perception of partisanship in news coverage (Wei, Chia, and Lo 2011). It may also be that the jumble of perspectives about the same events may leave readers skeptical that any media are getting the story right. Whatever the cause, alarm bells should be going off in these countries; if freedom of the press is held to be a bulwark of their democracies, growing distrust of the media may undermine the very concept. This conclusion points to the need for more research into the causes of the phenomenon—and possible fixes.

The findings of this study should be interpreted in the context of several limitations. First, we accounted for the effects of press freedom, which is consistent with previous studies (e.g., Wei et al. 2014). While this is an important macro-level factor as identified by previous studies, given its associations with media credibility perceptions as well as mobile phone use, the four cities included in this current study also vary across other macro-level measures. Since this current study's main focus is on investigating the

effects of individual-level variables, future studies can build on this study's findings to account for the effects of other macro-level variables by involving other media contexts outside the regions we studied.

In addition, the samples used in this study included educated, largely affluent people from Confucian Asian countries; findings may not be generalizable in other East Asian societies such as Japan or Korea, much less the rest of Southeast Asian countries. Thus, another limitation of the present study. Also, the reliance on mobile media for news-seeking, which as a positive correlate of mobile news credibility, flipped to be a negative predictor of mobile news credibility. This seemingly contradictory result can be attributed to the effects of more powerful predictors such as demographics and perceived utility of mobile news in the regression equation, suggesting the measure of reliance of mobile news for news-seeking needs to be enhanced in future research.

Finally, self-publishing on mobile platforms like WeChat, Line and WhatsApp, constitute a rising part of public information. However, news content produced by journalists and citizens were not differentiated in the present study. Hence, yet another limitation. Future research needs to expand the scope of mobile news by analyzing user-generated news content.

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No potential conflict of interest was reported by the authors.

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